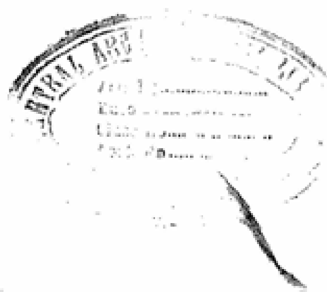
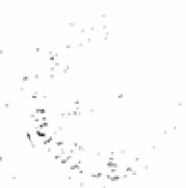






# INDIAN CIVILIZATION
## AND ITS ANTIQUITY.

BY

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# PREFACE.

The world was created, according to the old Testament, about 4000 years before the birth of Christ. The earlier of the orientalists, some of whom took to the study of Sanskrit with commendable zeal and industry, set to themselves the arduous task of compiling political and literary histories of India. In so doing, they were confronted with a mass of materials found in the Indian chronicles, called the Puranas, which claim for the Indians a civilization which commenced thousands and thousands of years before the birth of Christ. It is a claim which these orientalists found it unable to support, in as much as they could not conceive of the existence of the world prior to 4000 B. C. The composition of the Vedas of the Hindus was therefore placed by these scholars between 1500 and 500 B. C., the authenticity of the Puranas was rejected, and the Ramayana and the Mahabbharata were treated as mere epics without any historical foundation at all. Advance of knowledge in recent times has served to remove from the minds of present-day scholars the implicit faith in the biblical dogma referred to above. Yet, it is an almost universal belief with the educated people of modern times that the world was created only a few thousand years ago, and that the oldest civilization cannot date farther back than, say, 15 thousand years before Christ. This assumption would seem to be most absurd to those who have entered into the spirit of the ancient Indian culture, unbiased by any judgment passed by modern scholars on the antiquity of such a culture. The idea of the absolute creation of the Universe, out of nothing, at a particular point of time, is more than an ordinary human being can conceive, in as much as it involves an

attribution to God of such human characteristics as desire, want, and striving for the attainment of an wished for object, and thus reduces him to the level of an imperfect and human being. We are, therefore, justified in assuming without entering upon a philosophical discussion of the subject, that the world is eternal with God and creation means nothing more than the re-construction and re-moulding of matter, which, to a certain extent, takes place every moment. If the world is eternal—and it cannot be otherwise—what justification there is for the assumption that the civilization of which we can have only a glimpse, through records of a few thousand years only, is the only civilization known to the world? Is it not quite reasonable to assume that an infinite number of movements of civilization came upon and passed away from the face of the earth? We have, of course, no history of these civilizations, and naturally so. Can history have a record of what takes place during an infinite number of years? Modern people have compiled a history for the last few centuries only. Let them proceed in their present method of compilation for a few thousand years more, and they would find the task to be hopeless. It is physically impossible for a human being to go through a history which contains a detailed survey of all that takes place during, say, ten thousand years, not to speak of a longer period. We may, therefore, safely assume that the idea of keeping a chronological and detailed history of the world must be given up after, say, fifteen thousand years, if not earlier. What would our historians do then? They would, in all probability, cull out of the past history some of the most important facts and arrange them in a method which was followed by the authors of the Indian Puranas. The Puranas are nothing but records of kings, sages, and important events that took place, in some cases, many thousands of years apart from one another. These records have been retained in the

Puranas only on account of their moral, social, and religious significance. The ancient Indians realised the futility of keeping a detailed history of the world which is eternal, and of their own civilization, which, we have every reason to believe, was the most ancient known to the modern world, and had therefore to record ancient events of especial importance in a way which differs from the method followed by the modern historians. That being so, we cannot discard the authenticity of the Puranas and consider them as a collection of mythical legends and anecdotes only.

We look upon the Puranas as having a historic basis. They are, with the Vedas and the Tantras, the most ancient literature of the Indians that have been preserved, after countless acts of destruction of books and libraries by ignorant people. The comparative modernness of the language in which the Puranas and the Tantras were written does not justify the conclusion that they are of comparatively modern origin, in as much as the language of the Tantras and the Puranas have been, for obvious reasons, revised from time to time, and new facts introduced into this group of literature.

According to the Puranas, the world is eternal, creation being taken to mean periodical reconstruction after dissolution. The age of the present Kalpa, *i.e.*, of the world from the time of its last reconstruction to the current year is 1955, 885027 years. This is a figure which is based upon a tradition, as transmitted from generation to generation, through our science, history, and scriptures.

It is not expected that the majority of the modern scholars would accept these views, at any rate, the present generation of them ; but this much can be asserted without the least hesitation that Indian civilization is much older than hitherto it has been considered to be. I propose to furnish the educated public with materials warranting a revision of the ideas hitherto entertained by them with

regard to the antiquity of the Indian civilization. I have touched upon the subject broadly in this paper, under four different headings, *viz.*, (1) Phallism and the spread of Indian culture, (2) Gipsies and the spread of Indian culture, (3) Indian chemistry and its antiquity, and (4) Words borrowed from Sanskrit. Each of these would justify my views that our estimate about the antiquity of Indian civilization is to be revised in the light of a huge mass of materials to be found in Indian books which have not yet been studied at all by modern scholars. As for instance, I may point out that books on astrology and chemistry, the Puranas, and the Tantras have not been studied properly and intensively. It is high time that these books should be studied carefully and their contents utilised with a view to build up a history of ancient Indian culture and civilization. It is a pity that no Indian University has hitherto made any arrangement for the teaching of such subjects as Indian chemistry and medicine, Indian astronomy and astrology, the Tantras, and the Puranas. These are subjects which are more suited to the spirit and genius of the Indians than are some of the subjects on which our educated countrymen have been wasting their time and energy without any appreciable benefit, moral or material, to themselves or to their country.

As regards the extent to which I have availed myself of the works of others, and the portions of the thesis which I claim as original, I have clearly indicated them in their proper places. The following is a rough list of books showing the sources on which I depended mainly for materials for my thesis ;—

1. Encyclopoedia of Ethics and Religion.
2. Encyclopoedia Britanica.
3. Works of Chaucer, Spencer, and other mediaeval English authors.

4. Books on Philology.
5. Some of the Puranas and the Tantras.
6. Books on Indian astronomy and astrology.
7. Books on Indian Medicines.
8. All the available books and manuscripts on inorganic chemistry and alchemy of the Hindus, some of which have not yet been published.
9. History of Hindu chemistry by Dr. P. C. Roy.
10. Chemistry in Iraq and Persia in the 10th century A. D. by H. E. Stapleton M.A. B.Sc. (Oxon).
11. Phallism in ancient worship by H. M. Westroppe and P. S. Wate.
12. Natural History of Language by T. G. Tucker.
13. Life of Paracelsus by Swainson.
14. Life of Paracelsus by Hartmann.
15. Ancient History of the Near East, by H. R. Hall.
16. Virgin of the World by Dr. Anna Kingsford and Edward Maitland.
17. Works of Robert Boyle.

41/A, GREY STREET,
*Calcutta.*
*The 7th March, 1928.*

BHUDEB MOOKERJI.

## ERRATA.

| | | | | Page. | Line. |
|---|---|---|---|---|---|
| Read | "when" | for | "whem" ... | 4 | 13 |
| ,, | समस्तु | for | समन्त ... | 51 | 6 |
| ,, | "11th" | for | "14th" ... | 73 | 8 |
| ,, | "9th" | for | "15th" ... | 73 | 12 |
| ,, | "evident" | for | "evidenced" ... | 75 | 8 |

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# Indian Civilization and its antiquity.



## CHAPTER. I.

### PHALLISM AND THE SPREAD OF INDIAN CULTURE.

The Indians have been worshipping the emblem of God, "SIVA", from time out of memory ; but this worship has not been confined all along to India only. There is ample testimony in modern times to the fact that Phallism was prevalent in almost every country, in the dim ages of antiquity. Even to-day, there has not been a total extinction of the rites in connection with phallism from countries like Japan, China, Indonesia, and the Pacific Archipelago. At one time it ran rampant among the aboriginal races of Africa and America, and exercised a considerable influence upon their social and religious customs. The Bible and some other sacred scriptures inform us that in days of yore, phallus-worship found particular favour with the people of Assyria, Judea, Syria, Asia Minor, Babylon, and other countries. Some time ago, several phallic emblems of dieties

Phallus worship has not been confined to India only. It was practised in ancient times in many parts of Asia, Indonesia., Africa, and America.

Reference in the Bible.

Phallic images un-

earthed in Babylon.

were obtained by excavation in Babylon. These were found to bear complete resemblance to the Indian emblem of God, "Siva".

Worship in ancient Egypt under different names.

In several parts of ancient Egypt, various gods under the names of Khem (akin to Sanskrit, "Kshema," meaning "Siva"), Horus (Sans. "Hara" ?), Osiris (Sans. "Iswara" ? ), Sebek (Sans. "Sivaka" ?), Seb (Sans. "Siva ?"), and Sarapis or Seraphis (Sans. "Sarpes"?), or the same god, under these different denominations, used to be worshipped. In the majority of cases, phallic emblems and, in some cases, tigers and snakes used to be worshipped, in connection with the adoration of the said gods. A lot of phallic emblems are still to be found carved on the walls of the Egyptian Pyramids.

Phallism prevailed almost universally in ancient Europe.

It is a matter of common knowledge that Phallism prevailed almost universally in ancient Europe, and that the Christian missionaries had to move heaven and earth in banishing it from that continent. Yet, the rites and practices in connection with phallism have not yet completely disappeared from that part of the globe, even after two thousand years of hard struggle. The habit of worshipping a phallic emblem was so deep-rooted in the minds of the common people of Europe that the ceremonies connected with phallic worship are

It is still practised in

still observed in Viza (capital of the Thraci

an kings of Greece)* by the Christians as well as the Gipsies of the locality, who are of Indian origin. It has been proved in another chapter of this book that, in ages long forgotten, the fore-fathers of these Gypsies left their primitive home in India, and migrated into the different parts of the world, and especially of Europe. They speak dialects which have mainly been derived from Sanskrit. A lot of phallic emblems are still found to be preserved in several parts of Ireland, and especially inside some of the churches. These images are called "Sheila-na-gig" (Siva linga ?) by the local people. Phallism was prevalent in Italy for several centuries. As a result of excavation in many parts of England and Scotland, a lot of phallic images have been dug out. These are exactly the places where the Roman conquerers of England had built their castles and settlements. It appears from this that the Romans were probably the people who introduced Phallic worship into the British isles. There is plenty of evidence to show that in ancient times phallism figured prominently in the religious practices of the people of Germany and France. It has been ascertained that

Viz in Greece by Christians and Gypsies who are of Indian origin.

Phallic images still preserved in Ireland, and

found in England and Scotland.

Phallism practised in ancient Germany.

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* See "Phallism" in Encyclopoedia of Ethics and Religion.

**France, and Lithuania.**

the people of Lithuania who speak a dialect containing innumerable Sanskrit words and had retained their heathenism up to the middle of the 14th. century, had pre-eminently been a race of phallus-worshippers till they were compelled to adopt Christianity as a result of their defeat in a fierce and prolonged crusade launched against them by the combined Christian forces of Europe.

**Introduced into Europe, Egypt, and Asia Minor, in connection with the worship of Bacche or Bacchus who was represented as having the same external features as the Indian God, Siva.**

Phallism was first introduced into Europe in connection with the worship of the Greek god, Bacche or Bacchus or Dionysus. There was a time whem Bacchus was worshipped all over Asia Minor, and especially in Phrygia and Lydia, with great pomp and enthusiasm. In the latter-mentioned places, the god was named "Sabagius" (Sans. "Sabasayi") and Bagaios (Sans. "Bakes"). In many parts of Greece, the orgies in connection with the worship of this god used to be held at dead of night in temples illuminated with the glare of thousands of burning torches, amidst the revelry of its votaries frantic with wine. In many cases, most abominable practices and mystic rites were performed in connection with such festivals. Among animals, bulls, goats, tigers, and serpents were favourite to this god, who had a sceptre called thyrsus (Sans. trisul ? ) and a drinking bowl in his hand, and a bull's

horn, called the horn of plenty, hung on his head. The mode of worship of Bacchus and of his symbol, the phallus, is said to have been described in details in a set of secret books called the "Sibylline" books. There is a story in connection with the origin of the word "Sibylline". Once an old woman, named Sibylla, offered to sell a poem, consisting of 9 volumes, to king Tarquinus Priscus for an exorbitant price. On the king refusing to accept this offer, the woman went away and burnt the three out of the nine volumes. She came back to the king and offered to sell the remaining six volumes for the amount originally demanded. This time also the king refused to agree to the proposal of the old woman, who, again, left the king's court, and burnt three more volumes. Again did she approach the king with her offer to sell the remaining three volumes for the price she demanded before. The king, surprised at the strange conduct of the woman, agreed to buy, out of mere curiosity, the remaining three volumes for the price demanded by the woman. These books, whioh are no longer extant, were held in high esteem by the Romans of old. They are said to have contained a forecaste about the future history of Rome and many other strange matters including the mode of

**Mode of worship prescribed in Sibylline books. not extant.**

**Story about the origin of the word, "Sybilline."**

has long been rejected as a fiction.

phallus worship. According to this story, which has long been rejected as being false and without any foundation, those books were named after Sybilla, the old woman. No one now believes that those books had any connection with the old woman, named Sybilla, who is believed to be a creature of fiction. What then is the origin of the name Sybilline? It is for us to consider whether the name Sybilline has got any connection with the Indian word "Sibling" or Shiva-linga (Phallus of Siva).

Is "Sybilline" a corrupted form of the Indian "Sibling"?

Traces of Phallism in Tibet and Bhutan.

Traces of the influence of Phallism still exist even in Tibet and Bhutan. The Lamas of Tibet are the most devoted to the chanting of sacred texts. During the greater part of the day, these Lamas are found to revolve what are known to be their prayer-wheels and to utter, all the time they do so, a sacred text, viz, ओं मणिपद्मे हुँ "Om mani padme hum." The text stands in a very close relation to the worship of the Phallic emblem of the Indian God, Siva. The word "Mani" in the language of the Tantras, means the Phallic emblem of Siva, and "Padma" means the part of phallic image which is known in India to be the "Gouripatta." It appears from the above that there is still a very strange commingling of Buddhism and Hindusim in the religious practices of the people of Tibet and

The prayer-wheel and the sacred text: its meaning.

A strange commingling of Buddhism and Hinduism in Tibet and Bhutan.

Bhutan. Those who have been to Darjeeling might have noticed that there are two priests in the temple of Mahakala Siva (in the Observatory hills), one of them being a Nepali Brahman and the other a Bhutia Buddhist. The former performs his worship with the help of sacred texts uttered in Sanskrit, whereas, the latter uses the Bhutia language for the daily worship of the very same God. It has already been said that Phallism was in vogue in Japan also, even during the palmy days of Buddhism in that country. There is another form of religion in Japan which goes under the name of "Shintoism", of which Phallism constitutes a prominent feature. Even to-day, numerous Phallic images are found to be preserved in the Shinto monasteries of Japan.

Phallism constitutes a prominent feature of Shintoism in Japan.

In days of yore, phallic emblems were worshipped in several parts of America, and especially in Mexico, Peru, the Hyti island, etc. On their first entrance into America, the Spaniards found that phallic images were worshipped and preserved carefully in the temples all over the country. A phallic image in Dahomi in Africa is styled by the people as "Lengba", the greatest of the gods.* The word "Lengba" might have

Practised in ancient America, and

In Dahomi in Africa.

* See Phallism in ancient worship by H. M. Westropp and C. S. Wate.

been derived from the Sanskrit "Linga-deba."

Origin of Phallism.

The question with which we are now confronted is "In what part of the Globe did Phallism first originate?" Indians in general will naturally come to conclude, from what has already been said, that India is the birth place of phallism, and that it spread, in course of time from India to the rest of the world, especially in view of the facts that it is India where phallism has been systematically practised and is still excersing a very potent influence on the religious lives of the Hindus. However natural and rational this belief may appear to us, we cannot expect the civilized World to accept this theory until a clear evidence is adduced in support of it. On the other hand, some modern scholars are disposed to think that the conception of phallism occurred to the primitive people, all over the world, independent of any suggestion being received by one people from another. The reason on which they base their assumption is that human nature is everywhere the same; it is therefore natural that the mind of man will act uniformly all over the world. It is a fact which, according to these scholars, can also explain satisfactorily the independence of growth and similarity in character of religious

Is India its birth place?

or did the idea occur simultaneously all over the world,

human nature being everywhere the same?

beliefs and superstitions all over the world. If this is borne in mind, we shall have no justification for believing that a particular country is indebted in this respect to some other country. However cogent and substantial this theory may appear to us, it cannot properly be applied to the genesis of phallism, as will be seen later on. Some scholars have gone a step further and assert that in the primitive uncivilized age, when the power of thinking was still immature, man was incapable of comprehending that there could be any work of creation apart from sexual relations. That is the reason why these scholars think that Phallism had its origin in the uncivilised state of society. If we care to accept this assertion as true, we shall have, perforce, to put implicit faith in Darwin's theory of Evolution, or in other words, we must take it for granted that in the primordial state of society, when men first appeared on the face of the earth, they were utterly uncivilised and led solely by blind impulses of nature, without being acted upon by any thing transcendental or supernatural, and that in course of time, through the instrumentality of natural forces, they succeeded at last in acquiring their present human mind and physique. In the opinion of these scholars, our primitive ancestors,

**Did it originate in the uncivilized state of society when creation could not be conceived apart from sexual relation?**

**An assumption which follows from Darwin's theory of evolution,**

**which leaves no room for the existence of God or any other super natural power.**

such as Brahma, Manu, Daksha, etc., were mute and barbarous creatures like the ourang outang, and their descendants acquired the power of speech through the blessed agency of natural forces. If we were to give credence to this theory, we must say that neither God nor any supernatural force had ever any hand in the formation and development of man's body and mind. It is needless to say that to many a scholar the forcefulness of this out and out materialistic theory of mundane evolution will appeal very strongly; but to some of us it will appear to be extremely crude and childish. It might be very difficult to prove the existence of God, but it is not at all impossible to point out numerous indications of the existence of supernatural forces, and their diverse effects. Modern science is powerless to unravel the mystery underlying even an infinitesimal part of the eternal and endless universe. As a matter of fact, Darwin's theory is no longer accepted by the most distinguished of the modern scientists and philosophers. Many of us know how Dr. Martineau and a train of distinguished philosophers have proved it to be untenable, and established its utter worthlessness by a volley of irrefutable logic. However, to avoid prolixity and complexity of details, we refrain from entering into a philo-

It is an out and out materialistic theory—

a theory which has not been accepted by great scholars.

sophical discussion of the subject. It would be enough here to mention that if the theories stated above regarding the genesis of phallism were true, the phenomenon of phallic worship would have become more prevalent amongst the barbarous tribes of the modern world, a conclusion which is not at all warranted by facts. India is pre-eminently noted for phallism ; and what do we find here ? It is no exaggeration to say that phallism does not at all prevail among the uncivilized races of India, nor is there any evidence to indicate that it did so, in days of yore. Neither can it be said that it originated from the inordinate lust for sexual gratification of its uncivilized votaries. It can not be said that a predominance of sexuality is a special feature to be noticed among the Indian voraries of Siva, who is never worshipped publicly without being represented by a phallic image. On the other hand, in the majority of cases, the real votaries of Siva are found to be characterised by a strict abstinence and sometimes by a total renunciation of earthly pleasures. These are facts the truth of which has been testified to even by the contributor of the article "Phallism" in Encyclopaedia of Ethics and Religion.

**India is pre eminently noted for phallism, which is practised here by the civilised and not by the barbarous races.**

**Neither is a predominance of sexuality a special charateristic of the Indian votaries of Siva.**

There is another class of ethnologists

who are of opinion that phallism first originated in Assyria and its neighbourhood, whence it spread to India and other countries in the east, and to Egypt and Greece in the west, but they have not been able to adduce any evidence in support of their assumption. So we need not enter into a discussion of their opinion.

Did phallism originate in Asia Minor ?

No evidence.

It has now to be ascertained, in what part of the globe phallism first originated, and in this connection, a question which naturally arises in our mind is, how did it come to be introduced into Greece ?

Phallism first introduced into Greece in connection with the worship of Bacche or Bacchus,

It has already been said that phallism was introduced first into Greece, and then, into the other countries of Europe, in connection with the worship of Dionysus or Bacche or Bacchus. Now, Bacche or Bacchus was not a god of indegenous origin to Greece. His worship, which was imported from elsewhere, was established in Greece, after a good deal of resistance from the people. If Bacchus was not indegenous to Greece, we shall have to trace the country where he came to be adored for the first time. It has been ascertained that, in ages long gone by, the worship of Bacchus was celebrated with great pomp in Asia minor, and especially in those parts of the country which were known by the names of Lydia and Phrygia,

called the "Indian Bacche" in Asia minor

the people of which used to call the god, the "*Indian Bacchus.*" It has also been known that the annual return of this god from India used to be celebrated every year in spring time in a great festival held in Mount Ymolus in Lydia. If there is an element of truth in these narratives, we shall have to admit that a god, or a human being regarded as such, had, in days of yore, gone over from India to Asia minor, Greece, and some other countries where he subsequently introduced phallic worship with its attendant rites and ceremonies.

Is there any reference to this "Indian Bacche" in the Puranas?

We have next to enquire whether any reference to this "Indian Bacche or Bacchus" can be found in our Puranas* or ancient chronicles. If we succeed in our attempt, there would no longer be any ground for the assertion that the story of Indian Bácchus is only an idle myth having no historical foundation at all. Fortunately, our search in this direction has not been in vain.

Yes, there is

In course of our search, we have, quite unexpectedly, come across a passage in Chapter VI of the Bamana Puranam, which

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* The Puranas are of a very ancient origin. They contain records of very ancient facts, considered important, not from the point of view of history but from that of society and religion. They have been revised, modernised, and made up to date from time to time.

The Baman Purana says that "Baka' King of Creetha (crete ?)—an Indian by birth, was one of the pioneers of phallic worship.

throws a good deal of light on the origin of Phallic worship. An extract from the passage is reproduced below :—"First of all, Brahmá selected for his own worship a phallic image of the God Shiva as yellow as gold, and then prescribed four different kinds of images for the four different orders or castes of society. In other words, he prescribed, for worship, a phallus of white colour to be used by the Brahmanas, of a red colour to be used by the Kshatriyas, of a yellow colour to be used by the Vaisyas, and of a black colour to be used by the Shudras. Brahmá also compiled four different kinds of scriptures for use by the four different castes in the matter of worshipping the Phallic Deity. Shaktri, son of Viswamitra, adopted the first mode of worship. Gopáyana was his disciple....The sage Apastamba adopted the third mode of worship. Baka, King of Creetha (Crete ?), a Vaisya by Caste, was his disciple."

It is now clear that Baka of the Purana is identical with Bacche or Bacchus

It will be abundantly clear from the above account that an Indian sage, named Apastamba, was an ardent worshipper of the Phallic Deity, and that Baka, King of Creetha, an Indian Vaisya by caste, was his disciple. That Baka was no other than Bacche or Bacchus of the Greek (and Assyrian) mythology, and "Creetha" was no other

than the island of Crete in the Mediterranean Sea would have to be admitted even by the most sceptic of the human beings. Now we see that according to the Indian chronicles, Baka, King of Creetha and an Indian by birth, was one of the pioneer worshippers of the phallic Deity. The same account is corroborated by chronicles and traditions of the west, according to which, the man or god-man who introduced Phallic worship into Greece, Egypt, Asia minor, and the adjoining provinces was the "Indian Bacche" or Bacchus.

of Greek and Assyrian mythology.

It was in Greece and its neighbourhood that Phallism was first practised in Europe. Gradually it spread over the rest of the continent. It has already been said that Phallic worship used to be celebrated with great pomp and splendour in Egypt and Asia minor. That Osiris, the chief of the Egyptian gods, was no other than Bacchus in one of his varied forms, was admitted by the ancient Greek historians. Sophocles has remarked that Bacchus exercised such a mighty influence on the minds of the people of Italy that it would be no exaggeration to say that this god was virtually the only ruler of Italy. This god was found to be worshipped under the name of Hebon (Shiva ? ) in Campania. The worship of

called Osiris in Egypt.

Hebon in campania.

Hebon was generally accompanied with that of his wife, Hebe (Shiva ? ) who was also known by the name of Kore (Gouri ? ) and Demeter (Deomata ?). Bacchus had a especial liking for a bull and a tiger. He carried a trident called Thyrsus (trisul ?) and a drinking bowl in his hands, while a horn of ox was found hanging from his head. This is a description which in every detail applies well to the Hindu God, Shiva. It would therefore not be unreasonable to infer from the above that Shiva, the Hindu God, was identical with Hebon or Bacchus, and that Gouri, the consort of Siva, used to be worshipped in the different parts of the western world under the names of Kore (Gouri), Hebe (Shiva), Demeter (Deomata), etc.

Names of His consort tally with the Indian names of the consort of Siva.

Now, the question which presents itself is this : If Baka, the Indian King of Creetha was identical with Bacche or "Indian Bacchus", how was it that Bacche or Bacchus is described as having the same external features as Shiva, the god worshipped by Baka ? The answer to this somewhat puzzling question is this, that Baka (Bacche or Bacchus) himself was not the god Shiva or Hebon, whose phallic emblem used to be worshipped in Greece and other countries. Baka or Bacche (or Bacchus) was the votary of the god Shiva or Hebon, who is repre-

Baka or Bacchus assumed all the external features of Shiva or Hebon, the god whom he worshipped.

sented as a god always followed by a bull and a tiger and having a trident and a drinking bowl in his hands, with a horn of bull hanging from his head. In accordance with the instructions given in the Hindu scriptures, a votary should try to assume all the characteristics of the god he worships. Agreeably to this instruction, Bacche appears to have assumed all the external features of Shiva, or Hebon, the god whom he worshipped. In course of time, people came to forget the difference between the worshipper and the worshipped,—between Bacche and Hebon (or Shiva)—and came to identify Hebon with Bacche or Bacchus. To sum up, it was the sage Baka, the Indian King of Crete, who was known by the name of "Indian Bacchus" in Lydia, etc, and came to introduce the worship of the Phallic emblem of the God Shiva (or Hebon) into the western countries. It was he who, surrounded by his ardent followers, frantic with wine, took the lead in the nocturnal revelries held in connection with the worship of the phallic emblem of the God, Shiva (Hebon or Dionysus). The god whose worship was introduced by Baka (Bacche or Bacchus) into the western countries was phallus (Sans. Phalesh), Dionysus (Sans. Dunesh), or Hebon (Shiva). The word 'phalesh' which,

This was in accordance with the Hindu Scriptures.

Subsequent identification of Baka with Hebon or Phallus,

the God whose worship was introduced by Baka.

in Sanskrit, means one who is a giver of fruits, is, according to Tod, author of Rajsthan, and some other scholars, one of the names of the Hindu God, Shiva. It has already been said that the people of the west came to forget, in course of time, the difference between Bacche (Bacchus) and Hebon—between the worshipper and the worshipped, and thus it was that Bacchus came to be identified with Hebon, and worshipped as the god who was represented, in ancient times, by a phallic emblem almost all over the world, and is still so represented in India alone. The word

Derivation of 'Dionysus'.

"Dionysus," according to Westropp, is a corruption of the Sanskrit "Deonishi" (meaning god of night)—an epithet which may be applicable to "Shiva." To me the word "Dionysus" is a clear contraction of the Sanskrit Dunesha (द्यूनेश) which is compounded of the two words, Duna and Isha. The word "Duna," in the language of astrology, means the conjugal relation as indicated by the seventh house, i. e., the house which is 180 degrees off from the ascendant, whereas "Isha" means one who controls. It does not require much stretch of imagination to understand that the God Shiva should be known by the name of "Dunesha," in as much as he was believed

to be the supporter and controller of conjugal relations, the combiner of prakriti and purusha—matter and soul, and the originator of the whole universe.

**Marked similarity between the names of the Indian God, Shiva, with those of the gods introduced in connection with phallic worship, into Asia Minor,**

It is interesting to note that there is a marked similarity between the names of the Indian God Siva and those of the gods introdued into the western countries in connection with phallic worship. A little reflection will make it clear that every one of these names is a contracted or corrupted form of some one of the several names of Siva. The names of the gods introduced in connection with phallic worship into Asia Minor were as follows ;—Chemos, Moloch, Merodock, Adonais, Sabazius, Bacchus or Bagaios, etc. Of these, "Chemos" is probably a contracted form of Khemes ( क्षेमेश ), meaning "full of bliss." The word " Siva " also means the same thing. This Chemos came to be pronounced as Khema in Egypt. In Sanskrit, Khema and Siva are synonymous. Both " Moloch " and " Merodock " are corrupted forms of " Mrirak " ( मृड़क ), one of the names of Siva. It has been pointed out by Westropp that the word " Adonais " is a contracted form of " Ardha-naris " which is a combination of the images of Siva and His consort "Gouri." The word "Sabazius"

is possibly a contracted form of "Saba-sayi," one of the names of Siva. "Bacchus" (or Bagaios) has already been shown to have originated from Baka. It may also have originated from Bakesha (meaning, in Sanskrit, the god worshipped by Baka). The names of the gods introduced in connection with phallic worship into ancient Egypt were :—Khem, Horus, Osiris, Sebek, Seb, Serapiz or Saraphis. It need hardly be pointed out that these are only the corrupted forms, respectively, of Khema, Hara, Iswara, Sibaka, Siba, and Sarpesha—names which are still applied to the Indian God "Siva." Khem, the aforesaid god, was called in Egypt the father god, whereas Maut (Sans. "mátá", meaning mother), his consort, was called the mother god. The same remarks apply to the gods introduced into Greece, Italy, etc., in connection with Phallism. These were Dionysus, Phallus, and Hebon, corresponding respectively to Dunesh, Phalesh, and Shiba—names of the Indian Shiva. The female gods who were worshipped in Greece, Italy, etc, as consorts of Hebon were Cteis, Kore, Hebe, and Demeter, corresponding respectively to Sati, Gouri, and Deomata—names of the goddess "Gouri"—the consort of Shiva.

Egypt.

Greece, Italy, etc.

Names of goddesses in the West correspond to those of the consort of Siva.

It has already been said that the books

which contained the details of procedure followed in connection with the worship of Hebon, Hebe, etc, were called the Sibylline books. That being so, it would not be improper to hold that the word Sibylline was only a corrupted form of the Indian word "Siba-linga," meaning a phallic image of Siva. The African name, "Lengba" appears to be a corruption of the Sanskrit, "Linga-deba," meaning a phallic god.

Such being the case, sibylline cannot but be a corrupted form of Sib-ling (Siva-linga).

In view of all the facts discussed above, we have no hesitation in concluding that Phallism originated in India, whence it spread all over the world, in after ages. It can therefore no longer be maintained that the phenomenon of phallic worship originated amongst the savages in ancient times. The theory of an independent growth and parallelism of ideas does not stand in the case of Phallism.

Phallism must have originated in India.

In tracing the origin of Phallism, we have lighted upon a piece of histrorical fact which would be of supreme importance to us. We have found that in pre-historic ages, an Indian Vaisya, named Baka, a disciple of the Indian sage, Apastamba, reigned in the island of Crete, in the Mediterranean sea. Most probably, the Vaisya (merchant) king came to the island of Crete in course of his commercial adventures and

succeeded in conquering the island, where he reigned as king. It is also probable that the island of Crete was a colony of the Indians and the fore-fathers of Baka had settled in that island, although they did not cut off their spiritual and social connections with India. Whatever that may be, it is quite clear that, in pre-historic ages, and long before the dawn of Greek civilization, Indian merchants used to go to Europe and establish kingdoms in that continent. We have also a sufficient reason to conclude that Indian sages also used to go abroad in those days in order to initiate people into the tenets of the Hindu creed.

**Conclusion: Indians of old used to go to Europe even in pre-historic times on commercial and cultural expeditions.**

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# CHAPTER II.

## The Gipsies and the spread of Indian Culture.

The surprising discovery of Sanskrit by Sir William Jones and some of his less reputed contemporaries was followed by a tendency in some of the European scholars to assign to this national language of India such an antiquity as has not yet been claimed for any other language known to the world, Of course, the estimate of relative antiquity which these early orientalists felt constrained to make with regard to Sanskrit and the Indian culture falls very far short of the idea of antiquity entertained by the Indians themselves with reference to their ancient language and civilization. Side by side with this tendency, there prevailed, almost universally, a kindred notion that India was the original abode of all social, religious, and artistic culture, found existing in the west. This view is borne out by testimonies given not only by the ancient and mediaeval historians but by the Scriptures themselves, Of late, there has arisen, among Modern European scholars, a counter-tendency to view the aforesaid theories with a bit of cynicism, and to consider the views of the early orientalists,

Some of the earliest orientalists considered Sanskrit and the Indian civilization to be very old, though not so old as the Indians themselves consider them to be,

yet, a band of modern scholars are not prepared to accept even the

moderate views of those orientalists and deny the possibility of the East ever contributing to the civilization of the West.

such as Sir W. Jones, and Schlegel, as exaggerated, so much so that Dr. Tucker complained that both Biblical and profane history had made inveterate a habit of looking to the East for the origin of all civilization found existing in the West. Attempts have been made in recent times to refute the theory of Asia being the primitive home of the so-called Indo-European stock. I am not however going to enter here upon a discussion as to the relative merits of these conflicting theories, and to offer my views on the tenableness of a theory of primitive Indo-Eupopean stock and their common abode. All that I propose to attempt here is to point out a most important, but hitherto unnoticed, source from which, in ancient time, the West received its civilization from the East. It is to be remembered that the days of advancing strange and uncritical hypotheses on insufficient data are no more. If we maintain that the West is indebted for its civilization to the East, or vice versa, we shall have to substantiate our statement by adducing evidence mainly drawn from language, literature, fragments of history and mythology, and consuetudes which are unfortunately the only authentic evidence now at our disposal.

Object of present enquiry :

The first thing which calls for a serious

consideration in the programme of the proposed investigation, is the question whether and how far the Gipsies have influenced the movements of European civilization. In some of the ordinary books on comparative Philology, we find it stated that the Gipsies are of Indian origin and speak an Indian dialect. Unfortunately, our information about the Gipsies is still very meagre ; none of the hitherto published books deals comprehensively with all the different dialects into which the language of the Gipsies has subdivided itself. Yet, a careful examination of the materials at our disposal cannot but produce an impression that the Gipsies have played a more important part in the history of European civilization than has hitherto been recognized.

Whether and how far the movements of western civilization have been influenced by the Gipsies who are of Indian origin and still speak an Indian dialect.

The Gipsies are a nomadic tribe, scattered all over Europe. They are also to be found in Egypt, Asia Minor, Armenia, Persia, China, and even in America. The number of those living in Europe is estimated at not less than 700,000, in addition to those who have already been assimilated with the people among whom the Gipsies have lived for centuries. The origin of the Gipsies was a matter of controversy till the year 1782, when their language, which had hitherto been regarded as a thieves' jargon,

They are a nomadic tribe scattered all over Europe and other places, and are more than 700,000 in number at present.

was seriously studied, and found to be an Indian dialect. It is now admitted on all hands that the Gipsies are of Indian origin, and that in "Romani" (the name given to the language of the Gipsies) we have an Indian tongue. The questions which now present themselves for solution are these :—When and from what part of India did these people migrate? To what of the several modern Indian tongues is the Gipsy dialect specially traceable? We understand that these questions have engaged the attention of several orientalists, who have not yet been able to arrive at any definite conclusion. All that they have been able to assert is that the Gipsy dialect "stands in the relation of a sister, not a daughter, to the seven principal new Indian Dialects. Its forms are after all more primitive than theirs; sometimes than those of Pali or Prakrits."* The following instances, which can be multiplied indefinitely, will be found interesting in this connection :—

When and from what part of India did they migrate?

| | | | |
|---|---|---|---|
| Gipsy Hasta (hand)— | Sanskrit Hasta— | Pali Hatha, |
| „ Kasta (wood)— | „ Kasta— | „ Kasta. |
| „ Ostha (lip)— | „ Ostha— | „ Otha. |
| „ Tras (fear)— | „ Tras— | „ Tas. |

* The quotations are from the Encyclopaedia Britannica, 9th Edition, on which I have drawn largely for my materials.

Now, it will be worth our while to proceed to a critical examination of the Gipsy dialect and to consider its relation with some of the modern Indian tongues. Our attempts in this direction are likely to be thwarted by an insufficiency of data, for the Gipsy language, as we find it now, is not the original tongue which the Gipsies brought with them from India. Naturally enough, the Gipsies have borrowed largely from the languages of the countries in which they have lived for many a century, so much so that many of the Gipsies know no cases or verb endings other than those of the lands of their adoption. Moreover, our knowledge of the modern Gipsy dialects, which are said to be not less than fourteen in number, is still very scanty and meagre. Yet, the little that I have been able to pick up warrants, I think, our arriving at a provisional conclusion as to the exact relation in which the standard Gipsy dialect stands to the modern Indian tongues. The following is a specimen of the language current among the German Gipsies :—"Miro Bara Devala dela berschindo"—i.e., My great God gives rain. It will be interesting to note that this particular sentence will appear to be familiar, on account of its affinity to their own dialects, to most of the modern Indians speaking dialects derived from Sanskrit ; but

Difficulties that stand in the way of a smooth enquiry :

(1) The Gipsies have borrowed largely from foreign languages.

(2) Our knowledge of the Gipsy dialects, more than 14 in number, is very scanty.

A provisional conclusion is therefore all that is now possible.

Specimen of a Gipsy dialect.

It is intelligible even to the most of the Sanskritic-

tongued Indians of modern times.

Examination of each of the words constituting the sentence quoted above shows that the Gipsy tongue is the most akin to the Bengali dialect.

the question, to which of these dialects the Gipsy tongue, as exemplified in the above sentence, is most akin, cannot be solved without a careful examination of each of the words constituting the sentence quoted above. Let us therefore proceed to put each of these words to a minute scrutiny, and pass our verdict. The first word, *viz.*, 'miro' is retained intact in Nepali only, while it has undergone slight variations in its form in Bengali (which has 'mor' as its equivalent), Hindi (which has 'merà' as its equivalent), and the other Sanskritic dialects. The next word 'bara' is pre-eminently Bengali, while it has undergone a slight modification in Hindi and some other dialects, in which it has taken the form of 'Barà'. Next comes the word 'Devala,' which is more allied to Bengali in its form than to any other dialects. If we are to render the two words 'Bara devala' into modern Bengali, they will stand thus, 'Bara deva.' No other dialect than Bengali can claim such a close similarity with the Gipsy tongue in regard to these two words. The fourth word, 'dela' is still in use without any modification in some parts of Murshidabád and in the north eastern part of Burdwan, while, elsewhere in Bengal, it is in use with a slight variation in form, *viz.*, dila or dilà.

The Nepali substitute for the word is 'dia' and the Hindi substitute is 'dià.' With regard to the last word, *viz.*, 'berschindo,' it will be seen that it is a slightly corrupted form of the Sanskrit 'barsa-bindu,' *i.e.*, rain drops. Nowhere in India do the illiterate people now use this compound word, in order to indicate rain drops. Every educated Indian can, of course, understand it easily, but, it is only in literary Bengali, which approaches more nearly to Sanskrit than any other modern Indian dialect, that we can still use the expression without any charge of obscurity or pedanticity on our part. That being so, the Gipsies, especially those in Germany, appear to have migrated from Bengal, rather than from any other part of India.

**Some of the customs still retained by the Gipsies confirm us in our belief in the Bengali origin of these people**

An examination of some of the customs still retained by the Gipsies may also confirm us in our belief in the Bengali origin of these people. We are told, as for instance, that a German Gipsy may not cook for four months after child birth. This is a custom the spirit of which is still observed, more or less, everywhere in India. A Hindu woman is regarded as unclean, and is not allowed to touch everything belonging to the household, for sometime after child birth. But, as regards the exact duration of the period

for which the custom in question is to be observed, it is the same as that which still prevails in some parts of Bengal, where the time limit is 3 to 4 months. We are told of another custom still in vogue among the German Gipsies, *viz.*, a vessel touched by the skirt of a woman's dress is considered defiled. It is notably in Bengal that the skirt of a woman's garment is accounted unclean, so much so that if, by chance, the skirt were to touch the head of a man, it would be thought unlucky; and in that case, he would try to avert the evil by treading it. Such customs, however, are gradually disappearing before the growth of a tendency to depend exclusively on commonsense, especially in those parts of Bengal where the influence of modern western civilization is growing more and more markedly prominent. In view of all this evidence, we are justified, I think, in concluding that the forefathers of the Gipsies lived in the plains of Bengal, which they were compelled to leave, under circumstances which I do not propose to examine here.

**The Gipsy tongue appears to be a very ancient Bengali language.**

We can therefore assert without much hesitation that in the Gipsy tongue, at least in that current in Germany, which appears to have been affected very little by foreign elements, we have a very ancient Bengali

tongue, more ancient than anything found in the manuscripts of ancient Bengali literature hitherto discovered. It is hoped, therefore, that our increasing acquaintance with the Gipsy dialects will throw more light on the state of the early Bengali language.

Facts which can claim for the Gipsies a Behari origin.

There are, no doubt, certain other facts which may equally claim for the Gipsies a Behari origin. We are told that the Gipsies call their males by 'Rom' and their females by 'Romni.' "Ramani" is the general Indian name for a female; so, there is nothing noteworthy in this epithet; but the word "Rom" will present an appearance of supreme importance to the philologists. It will be seen that the word has proved to be a puzzle to the orientalists. It is connected by G. A. Paspati with the name of the Indian god "Ráma", while Miklosich identifies it with the Sanskrit 'dome' or 'domba', a low caste musician. But neither of these conjectures is correct. Let us see whether the word is still in use in any part of India. The reply will be in the negative; but, one who has an intimate acquaintance with modern Indian dialects will not hesitate to declare that the Gipsy 'Rom' is still in use in a slightly modified form, in Behar, where the epithet for a gentleman is

Gipsies call a female by "Romni" and a male by "Rom.".

"Ramani" is still the general Indian name for a female, whereas "rom" is used at present only in Behar (in a slightly modified form, viz, roumá (रौमां)—a contracted form of "ramya" (meaning a beautiful person) to indicate a gentleman,

'Roumà' (रौम्यां), a contraction of the sanskrit 'Romya' (the beautiful), exactly as 'Babu' (contraction of "bhabya," the gentle,) is in Bengal. Derivations of both these words, *viz.*, 'Babu' and 'Roumà,' have been a matter of controversy with the Indian philologists. None of them has hitherto hit upon the true solution that both 'Babu' and 'Roumà' denote the very same thing, *viz.*, a respectable person, the former being a contraction of 'bhabya' and the latter that of 'romya.' Each of these is, therefore, employed by common people to denote a man of noble birth. Denoting, as they do, the idea of a beautiful and gentle person, both these words point to a period of the Indian history, when the dark-coloured aborigines presented a very sharp contrast to the newly arrived Aryans of a very handsome appearance. It appears that such an epithet was in frequent use in the early history of the Aryan colonization in India. But, with the gradual incorporation of the aborigines into the Aryan society, though at lower strata, the social difference between the two races was not much felt. The result is that such an epithet does no longer exist outside Bengal and Behar; and even in those provinces, the epithets have lost their original significance. All

an epithet coined in ancient times to denote an aryan as distinguished from an aborigines.

these facts converge to the conclusion that the Gipsies migrated from Bengal and Behar; and probably at a time when these two adjoining provinces had a common tongue. Even if we suppose that at none of the stages of the linguistic development of India, had these two provinces a common tongue, we shall have to admit, at any rate, that the Gipsies migrated from both the provinces, and especially from the tract lying between the two.

The Gipsies appear therefore to have migrated from a tract of land lying between Bengal and Behar, at a time when the distinction between the aryans and aborigines was still observed very keenly and with ostentation.

Whatever that may be, they left India at a time when the distinction between the Aryans and the Aborigines was still observed very keenly and with much estentation. This agrees well with the view of Batailard, who maintains the pre-historic origin of the Gipsies. The same conclusion cannot but force itself upon every one familiar with the spirit of Indian tongues.

A conclusion which agrees with the views of Batailard who maintains the pre-historic origin of the Gipsies.

Enough has been said to show that 'Romani' approaches Sanskrit more nearly than even 'Pali.' Yet, a little more discusion of the subject will not be found quite uninteresting here :—

Romani or the Gipsy language approaches more nearly Sanskrit than Prakrits do.

Examples.

The Romani 'bearengaro' (Sanskrit, 'baryankara') means a sailor; and Romani 'bearo' (Sans, 'barya" derived from 'bari' *i.e.*, water) means a ship. Similarly, Romani

'Petulangaro' (Sans. pittalankara) means a smith (from pittal, brass), and Romani 'sivamangaro' (Sans. sibamankara, *i.e.*, the maker of a thing sewn) means a tailor.

In all such words, the inflections are peculiar to Sanskrit only and not to Prakrits. Again, the Romani 'Ishom' (I am) approaches Sanskrit 'Asmi' more closely than the Prakit 'Ahmi.' In view of all these facts, Miklosich's theory that the emigration could not have taken place till the Prakrits were formed, can not be maintained. Of course, there is no denial that there is "some agreement of Romani in its phonetic laws and system of case-endings with the modern Aryan languages of India," but such an agreement is inevitable from the nature of the case. Since, Sanskrit passed into Romani, which, in its turn, developed into Prakrits and, modern Indian dialects, it is natural that there should be some agreement in case-endings and phonetic peculiarities between Romani and the modern Indian dialects, as between Sanskrit and Romani. Hence, we are led to conclude, from more than one reason, that Romani is the modern development, in foreign environments, of a language spoken by the people of India especially of Bengal and Behar, long before the Prakrits came into being. The Gipsies

**The Gipsies appear therefore to have migrated from India before the formation of**

appear, therefore, to have migrated from India not later than 1000 B.C.

*the Prakrits i.e. before 1000 B.C.*

The question then presents itself, when did these people appear for the first time in the history of Europe? Nothing has hitherto been found to gratify our curiosity on the subject. There are of course a few doubtful references to the Gipsies in some of the writings of the 8th or 9th century A.D., but we have not yet come across any definite mention of the Gipsies in the history of Europe, prior to the 12th century A.D., which has therefore been considered by some of the European scholars to be the probable date of the entrance of the Gipsies into Europe. Taking for granted that the Gipsies appeared in Europe about the 12th century A.D., after they had left India at least 1000 years before the birth of Christ, we are naturally led to ask what these people were doing in the period intervening, *i.e.*, before we meet them in the history of Europe. In view of the fact that the Gipsy dialects contain a good many words which are decidedly of Persian and Armenian origin, it is admitted universally that, in course of their migration, the Gipsies had to pass through Persia, Armenia, and some other adjoining lands. It is not therefore quite improbable that the Gipsies had lived at

*They entered into Europe presumably about the 8th century A.D.*

*Where had they been from, say, 1000 B.C. to 1000 A.D.?*

*Their language contains several Persian and Armenian words. They had probably lived for several*

centuries in Persia, Armenia, Egypt, Phoenicia, etc. where many of their descendants still live.

least for 2,000 years in Persia, Armenia, Phoenicia, Egypt, and some other adjoining-lands. Descendants of the Gipsies are still to be found in all these countries, and specially in Egypt and Asia Minor, where their number is estimated at about 100,000. The Egyptian Gipsies, unlike their European kinsfolk, are found to lead a non-nomadic life. It will not therefore be quite dogmatic to assert that the Egyptians, Phoenicians, and Babylonians, who are said to have attained to a high pitch of civilization at a very early age, received at least a part of their civilization from the forefathers of the Gipsies, who had migrated from India at a pre-historic age, and had settled down in all these countries. Whether Egypt, Phoenicia, Babylon, and Chaldea were indebted to the Gipsies for all the civilization these countries could boast of is more than can be safely asserted; but it is proved, beyond the shadow of a doubt, that the Gipsies had lived for many centuries in some of the countries lying between India and Europe; and carried with them to those countries at least a part of the Indian culture. It is said that the name 'Gipsy' was given to these people by the Europeans on account of their connection—real or supposed,—with Egypt. The Gipsies are said to have maintained,

Number of Egyptian Gipsies, who are of non-nomadic habits, are about 100,000 at present.

Egypt, Phoenicia, etc. must have received at least a part of their reputed civilization from the Gipsies.

The name Gipsy or Egypsy was given to them as they said that

on their appearance in Europe, that they came from Egypt, or according to another version, from a country which they called the 'Little' Egypt (Phoenicia or Babylonia ?). For several centuries, the Europeans were satisfied with this history of the genesis of the Gipsies; but of late, they have come to call these statements of the early Gipsies in question, on the ground that these people are evidently of Indian origin. "Thus Gipsy or Gypsy itself ('Egypsies in the 16th century)," says the Encyclopaedia Britannica, "magyar Pharao Nepick (pharao's people), and Turkish 'pharaunic,' preserve the belief in its Egyptian origin, a belief which finds no confirmation except in the casual resemblance between 'Rom' and Egyptian 'Rome' (man)." What the European scholars have hitherto ignored is the fact that it was quite possible for the Gipsies to have been Egyptians as well as of Indian origin. There is no reason to disbelieve that the earliest Gipsies, on their arrival in Europe, called themselves Egyptians; otherwise the name "Egypsies" would not have been given to them. It is for us to consider whether the Gipsies told a deliberate lie or they were justified in calling themselves "Egypsies." It will not however be very easy, at this distance of time, to ascer-

they were Egyptians.

At that distance of time they

could not call themselves Indians.

tain whether and how far the earliest Gipsies, on their entrance into Europe, had any memory of India which their ancestors had left many centuries ago. It was at least 2,000 years since the ancestors of the earliest European Gipsies had left India. It is not therefore quite unreasonable to suppose that they had little or no memory, when they found themselves in Europe, of India being their primitive home. Even supposing they possessed a very nebulous idea that their ancestors had come from India, it was not possible for the Gipsies to claim India as the land of their birth. It was quite natural that they would name, as their original home, some other country where they had lived for such a considerable length of time. As they maintained, and we have no reason to suppose otherwise, that they had come from Egypt or Little Egypt, they had surely come from Egypt, Phoenicia, Babylon, and the adjoining lands, where they had lived for centuries. No other conclusion can be drawn from the foregoing data. The resemblance between the Gipsy 'Rom' and the Egyptian 'Rome' is not merely casual, as maintained by the Encyclopaedia Britannica. This resemblance points no doubt to the fact that both the

The Egyptians also call their males by "Rom" (Gypsy Rome).

The Egyptians and the Gipsies

Gipsies and the Egyptians were of the same origin.

are of the same origin.

The recent discovery in Egypt of an image of the Hindu Goddess, "Durga," (with an inscription at the base, "Duggamma," corresponding to Bengali "Durgama") cannot but lend support to this view. It will also be interesting to note that it is in Bengal that the Goddess Durga is worshipped more extensively than in any other province of India. This strengthens our guess that the Gipsies are of Bengali origin. The Egyptian 'Rome' and the Gipsy 'Rom' is nothing but the Indian 'Roumá' or 'Romya.' The earliest name given to Egypt was Misar or Misra, which is assuredly an Indian name, and so is Nile, i.e., blue, the name given to the great river. These are not Arabianised Indian names, but are pure Indian words which had been in use long before the Arabs took possession of the country. For 'Nile' the Arabs substituted their own name, when they established their sway in Egypt. It follows therefore that the Indians came into contact with Egypt, at a certain period of the pre-historic times; and their intercourse with the original inhabitants of the land gave rise to a mixed race, as the name "Misra" (i.e., mixed), seems to imply. An

The recent discovery in Egypt of an image of the Hindu Goddess 'Durga' supports this view.

attempt will hereafter be made to enter into a minute examination of the subject and to consider whether India contributed, to an appreciable extent, to the civilization which grew in Egypt, Phoenicia, Babylonia, and the adjoining countries.

Some political disturbance must have compelled the Gipsies to leave Egypt, Etc. and to take refuge in inhospitable Europe.

For the present, we rest content with the broad fact that the Gipsies were the descendants of those Indians who had domiciled themselves in all those countries, and that it was some political disturbance of a serious nature (of which we meet with many in all these lands in mediæval ages) that constrained them to kick the dust of the land of their adoption off their feet and take refuge in Europe, in spite of the inclement rigours of its climate and the obdurate inhospitability of its people.

Even in degeneracy they have shown signs of a very intelligent race.

I shall next consider what role the Gipsies played in the growth of civilization in Europe. We are told that in spite of the most cruel and inhumane treatment to which the Gipsies have been subjected by the people of Europe for several centuries, these unfortunate people have not failed to show, even in the present state of their hopeless degeneracy, signs of a very intelligent race. "Everywhere Gipsies ply an endless variety of trades. In Egypt, they monopolize the art of serpent charming,

in France and Spain they sit as professional models . . . . . . Everywhere the men have three principal callings—workers in metal, musicians, and horse-dealers . . . . . Gipsies have long been famous as copper and iron smiths in South Eastern Europe, where their horse-shoes are reckoned unrivalled. In England, the surname "Petulangro* smith, alone recalls the day when Gipsies surpassed the Gentile in the Farrier's craft. Liszt ascribes to the Gipsies the creation of Hungary's national music. "The Gipsy's favourite instrument is the violin (Sanskrit, "Bahulin"), but few are the instruments he has not successfully essayed." Their women are pleasant dancers. "Quick and versatile, all Gipsies readily adapt themselves to any state of life; they have so wonderful a gift of tongues that formerly it was reckoned against them for a proof of sorcery." It will appear from the foregoing remarks that the earliest Gipsies were a highly cultured people and brought with them at least a portion of the Indian culture which they naturally disseminated throughout Europe, at a time when that continent was deeply immersed in barbarism and superstition. *It*

**They have been famous as good smiths, snake charmers, musicians, etc.**

**They created Hungary's national music.**

**Quickness, versatility, adaptability to any state of life, and wonderful gift of tongue are their special characteristics. Knowledge of metal was introduced into Europe by the Gipsies.**

* Sanskrit "Pittalankara", from pittala—brass. The word "Petal" has acquired a secondary significance in England, viz., horse shoe.

*has almost universally been admitted that the knowledge of metal was introduced into Europe by the Gipsies.* Such was the magnitude of the influence exerted by the Gipsies on the early European societies that the country Roumania has taken its name after "Romani" and not after Rome, as is generally supposed to be the case.

Roumania has been named after "Romani"—the Gipsy tongue.

"Scarce one of the folklore of the Gipsies has yet been published but its counterpart may be found in Grimm's, Ralston's or other collections of European folklore." This resemblance of Romani to Gentile may, according to the Encyclopædia Britannica, be satisfactorily explained only by the fact that the European nations have received their stories from the Gipsies.

Europeans received their folk lore from the Gipsies,

The marked resemblance of many of the European words to Indian ones has hitherto been explained by the theory of a common origin—the assumption of a common Indo-European stock from which both the Aryan Indians and the Europeans have descended. Without questioning the validity of the theory, at this early stage of my investigation, I should state that an examination of the Gipsy words at my disposal has made me believe that the Gipsies have contributed largely to the enrichment of European vocabularies. That the Europeans bor-

who have contributed largely to the enrichment of European vocabulary.

rowed a great many of their words from the Gipsies is evident even on a superficial examination of the Gipsy dialects, hitherto available to us. At present, our knowledge of the Gipsy dialects is far too scanty to warrant an exhaustive treatment of the question, and we shall have to wait for further materials before the final conclusion is arrived at ; but the materials already at our disposal will be sufficient to justify the assumption of the indebtedness of the Europeans to the Gipsies for the development of the former's language. Let us refer to a few instances which can be multiplied indefinitely :—

**A few instances of the linguistic debt owed by the Europeans to the Gipsies :—**

(1) The infinitive verb in Sanskrit ends invariably in 'tum' as in kartum, jatum, etc. This 'tum' is changed into 'te' in Bengali, as in karite, jaite, etc. It will be interesting to note that this "te" is also in use in the dialect of the Gipsies, e.g., Gipsy "te ja"—Bengali, "jaite"—to go, Gipsy "te kerra"—Bengali, "karite"—to do (make). It will be seen that the position of 'te' in the Gipsy dialect is not the same as it is in Bengali. While an infinitive verb ends in 'te' in Bengali, it is not so in Romani, in which 'te' is preceded by the verb. In other words, the order of the verb and the particle 'te' is reversed in Romani.

The normal sign of infinitive in Anglo-Saxon was not the preceding 'to' as it is in modern English, but the ending 'an' which was subsequently changed into 'in' or 'ien' in mid-English. It is only in the English of the second period (A.D. 1100 to about 1250) that we find that 'to' is sometimes used before infinitives. We meet no doubt with the word 'to' in Anglo-Saxon, but it is in a different sense, viz., in the sense of motion, rest at, etc., and sometimes to form adverbs. It is, therefore, quite possible that the particle 'te' which is the sign of infinitive in Romani has passed into the English 'to', at first as a sign of dative infinitive, and subsequently as that of an infinitive proper.

(1) Gipsy "te" has been transformed into the English "to".

The contrary assumption, that the Gipsy 'te' has been borrowed from English 'to' is disproved by the fact that the Gipsy 'te', as stated above, is the same as the Bengali 'te' which is only a variation of the Sanskrit 'tum.'

(2) Let us pick up a sub-sentence from the dialect of the Welsh Gipsies. It runs as follows :—

(2) English "mad" has been derived from the Gipsy "matay" (Sans. matta).

Te ker tomen Matay (Bengali, Karite tomake matta or matal; Sanskrit, kartum twum mattam)—to make you drunk (mad). Does it not appear that the word 'mad' has been derived from the Gipsy 'Matay' ?

(3) Similarly, Gipsy 'bootee', meaning "work" (Sanskrit britti) is akin to English 'booty,' meaning "spoils" (of war or plunder).

(3) Sans. 'britti' =Gipsy "booti"= Eng. 'booty'.

(4) Gipsy 'tras' (Sanskrit 'tras') meaning "fear" may have given rise to 'terror.'

(4) Eng. 'terror'= Gipsy 'tras'.

(5) Gipsy 'ishom' (Sans. ashmi) i.e., 'I am,' may have been transformed into 'I am.' It will be seen that the word 'am' is not found in early English.

(5) Sans. 'ashmi'= Gipsy 'ishom'= Eng. 'I am'.

(6) The word 'devil' (Old English, devel) has evidently originated in the Gipsy 'devel' (god). No wonder that the God of the Gipsies who were looked down upon as heathens and sorcerers should be given a very low character, leading to the conception of an anti-divine being existing in mere fiction.

(6) Sans. 'deva' =Gipsy 'devel'= Eng. 'devil'.

(7) It is evident that the word 'Barge' has been derived from the Gipsy, 'bearo' (Sanskrit, Barya), meaning a ship.

(7) Sans. 'barya' =Gipsy 'bearo'= Eng. 'barge'.

Innumerable examples of a similar nature can be cited ; but I refrain from doing so, till I am in possession of a comprehensive information in regard to all the Gipsy dialects.

But what has already been stated leaves very little room for doubt that the Gipsies have played a very prominent part in the spread of civilization in the west.

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# CHAPTER III.

## INDIAN CHEMISTRY AND ITS ANTIQUITY.

In his "Chemistry in Iraq and Persia", Mr. Stapleton has observed that most of the knowledge regarding metallic and inorganic Chemistry found in Indian treatises actually originated from outside India. He has based his conclusion on the fact that Ar-Razi, the Persian Chemist, wrote a little earlier than the 10th century A.D. the date assigned by Dr. Sir P. C. Roy to the composition of what he considers to be the earliest work on

Mr. H. E. Stapleton M. A., B. Sc. (Oxon), Director of Public Instruction, Bengal, has been taking much interest in ancient chemistry. His illuminating paper on the "chemistry in Iraq and Persia in the tenth century A.D." (*vide* Memoirs of Asiatic Society of Bengal, Vol. VIII. No. 6) which he has written in collaboration with the late R. F. Azo and Shamsul-ulama H. Hidayat Hossain, has been devoted to a critical study of the works of the celebrated Persian chemist and physician, Ar-Razi, who died late in the first quarter of the tenth century. In making a very able and careful survey of the work of Ar-Razi, Mr. Stapleton has been forced to conclude from a comparison of the facts that have been brought to light in his paper with those given in the History of Hindu chemistry by Sir P. C. Roy "that the earlier and possibly autochthonous system of Indian alchemy based almost entirely on the use of vegetable juices was superseded sometime between 500 and 1000 A.D. by a system of external origin which was

primarily based on the use of mercury", and that most of the knowledge regarding metallic and inorganic chemistry found in Indian treatises on alchemy actually originated from outside India.

Hindu Chemistry, *viz.*, Rasa-ratnakar of Nagarjuna.

Mr. Stapleton has based his conclusion mainly on the ground that Ar-Razi and some of his Persian predecessors were acquainted with a good deal of metallic chemistry before the composition of what he considers, on the authority of Sir P. C. Roy, to be the earliest treatise on the metallic chemistry of the Hindus, *viz.* Rasa ratnakara, which, according to Dr. Sir P. C. Roy, was compiled in the tenth century A. D. Mr. Stapleton, however, admits that Ar-Razi was acquainted with Charaka and Sushruta, the two well-known treatises on the science of vegetable chemistry and medicine of the Hindus, and even made use of them in his medical works. It is, therefore, only in the field of metallic chemistry and alchemy, and not in the field of vegetable chemistry and medicine, that Mr. Stapleton claims priority for Ar-Razi and a few of his more ancient countrymen.

He however holds a different view about the organic Chemistry of the Hindus.

This is a view taken by Mr. Stapleton prior to the publication of my Rasa-jala-nidhi (Ocean of Indian chemistry and alchemy), a

Mr. Stapleton's work was published before the

publication of my Rasa-jala-nidhi, in which I have claimed a great antiquity for Indian Chemistry, organic and inorganic.

comprehensive and scientific treatise on the subject, meant to be completed in about 10 volumes, of which the first two only have been out. In the preface of vol. I of my book, I have maintained that chemistry and alchemy began to be cultivated by the ancient Indians even from the dawn of Indian civilization, which, according to the Puranas, took place sometime after the commencement of the present Kalpa, *i.e.*, about 1950,000000 years ago. This will appear to be incredible to many people.

Mr. Stapleton would have me to prove that there was in India a metallic Chemistry prior to the time of Ar-Razi, who died in the 1st quarter of the 10th century A.D.

Whatever that may be, the report of Mr. Stapleton's scholarship and love of culture, and specially of the interest he has been taking in ancient chemistry made me present him with a set of my publication which he has kindly appreciated. He has, however, made the following remarks, in respect of my claim to the antiquity of Indian chemistry :— "What everybody is anxious to obtain is some historical proof that there was a metallic Ayurveda before the time of the Muhammedans ; or whether mercury preparation, for example, came to be known in India only after the time of the celebrated Persian physician and chemist, Ar-Razi." Mr. Stapleton had the kindness to present to me a copy of his valuable work, referred

to above, which I have studied with much interest and profit.

In order to satisfy Mr. Stapleton, whom I regard to be an excellent type of a modern scientist and a chemical historian of great ability, I propose to deal with only a few of the points justifying my conclusion that metallic chemistry and alchemy, based on the use of mercury, was known to the Indians, long before the time of Ar-Razi, who died late in the first quarter of the tenth century A.D. :—

*Charaka, Sushruta, and their predecessors.*

There have been, from time out of memory, four different schools of medical treatment, flourishing side by side in India, *viz.*, treatments with (1) mercury and metals, (2) vegetable drugs (3) spells and incantations, and (4) surgical instruments. Both Charaka and Sushruta belonged to the second and the fourth classes of physicians, and have all along been the most popular, and widely known, though by no means the best and the earliest, of Indian authors of medical treatises. The cheapness of vegetable drugs and the facility of preparing such drugs are some of the reasons which account for the popularity of Charaka and Sushruta. Belonging as they did to the organic school

**Charaka and his predecessors, Bhela, Harit, etc. belonged to the herbal school of medicine, and paid greater attention to vegetable drugs than to minerals ;**

of Ayurvedic chemistry, both Charaka and Sushruta paid more attention to herbal than to metallic drugs, and did not encroach much upon the domain of the metallic chemists. Yet, the medicinal use of metals and minerals was not quite unknown to these compilers. Both of them were acquainted with the medicinal use of many of the metals and ores. There is a distinct reference to the use of mercury in Sushruta, although Charaka is silent upon it.

yet they have made use of several metals and other minerals.

The diction and style of Charaka approaches more closely to the Vedic language than to the language used in such books as the Ramayana and the Mahabharata. It appears therefore that Charaka flourished in the pre-historic age.

They flourished in the prehistoric age.

The same remark also applies to Sushruta. There is a clear reference in the Mahabharata to Sushruta, son of the sage Viswamitra, who learnt the science of medicine from Divodas, king of Kashi, and compiled a medical treatise in his own name. There is a sufficient evidence to show that Sushruta, referred to in the Mahabharata, and Sushruta, the author of the famous compilation are one and the same person.

The same remark applies to Sushruta also who has been referred to in the Mahabharata,

This leads us to an enquiry into the age of the Mahabharata, which was undoubtedly composed long after the Sushruta Sanhita had

been composed and widely known. There is a well-known passage in the Mahabharata, which furnishes some clue to the probable date of the composition or recasting the great epic, *viz.*,

which contains a passage saying that Bhisma died just on the close of Mágha—on a winter Solstice.

माघोऽयं समन्तप्राप्तो मासः
सौम्यो युधिष्ठिरः—इत्यादि ।

The gist of this passage is that Bhisma died just on the close of the month of Mágha (*i.e.*, the month in which the sun was in the sign of Capricornus) and that it was exactly the day on which the winter Solstice * took place in that particular year. To arrive at a proper understanding of this passage we shall have to digress upon the domain of elementary Astronomy.

Equinoctial line.

Astronomers have conceived a great circle running through the heavens from east to west, which is called the equinoctial line, because, whenever the sun in his apparent course through the heavens comes to this circle, days and nights are equal all round the earth. This happens twice a year. At other times, the sun declines from the line, sometimes to the north and sometimes to the south. Similar is the case with other planets, but none of the planets

* Winter Solstice is the day when night is the longest and Summer Solstice is the date when day time is the longest in the year.

ever reach beyond 10 degrees on either side of the equinoctial line. Hence, another great circle is conceived in the heavens extending ten degrees on each side of the equinoctial circle, within which are confined all the planets. This circle is called the Zodiac and is divided into 12 equal parts of 30 degrees each, called the signs, *viz.*, (1) Aries (Mesha), (2) Taurus (Vrisha), (3) Gemines (Mithuna), (4) Cancer (Karkata), (5) Leo (Sinha), (6) Virgo (Kanya), (7) Libra (Tula), (8) Scorpio (Vrischika), (9) Sagittaris (Dhanus), (10) Capricornus (Makara), (11) Acquarius (Kumbha), and (12) Pisces (Meena).

**The Zodiac and the signs.**

**Two ways of taking the starting point of the Zodiac.**

There is a difference between the way in which the Europeans take the starting point of Zodiac (*i.e.*, the commencement of Aries) and that in which the Indians do it. There was, of course, a time when day and night were equal on the 14th of April. This was when the ecliptic or sun's track in the Zodiac crossed the Equinoctial line at the beginning of the fixed star, "Aswini". Indian astronomers take the starting point of Aries from that point, whereas European astronomers take the starting point of the Zodiac and of the Aries, for a particular year, from the point where the ecliptic crosses the Equinoctial line in that year. At present,

day and night are equal on the 22nd of March and the crossing point of the equinoctial and ecliptic has preceded about 22·8 degrees from its original position when day and night were equal on the 14th April. This is what is meant by the precession of the equinoxes by 22·8 degrees from its original position when day and night were equal on the 14th April. It follows then that the beginning of Aries and, for the matter of that, of every other sign is fixed, according to the Indians, whereas, it varies according to the Europeans. At present the starting point of Aries is about 22·8 degrees behind the point which is taken by the Europeans as the starting point of that sign. The Indian year therefore commences on the 14th of April and the duration of the 12 months (solar) is calculated according to the apparent coincidence of the sun with the 12 signs. The month of Mágh (solar) is the month when the sun appears to be in the sign of Capricornus, calculated according to the Indian method.

**Precession of the equinoxes.**

In the light of all these explanations, let us see what the passage quoted from the Mahabharata indicates. It tells us that winter Solstice took place on the thirtieth day of Mágha, and that was the day when Bhisma

**Winter Solstice took place on the 30th of Mágha when Bhisma died. In**

the current year it takes place 52 days earlier. The Mahabharata must have been composed about 1816 B.C., at the latest.

expired. In the current year, winter Solstice took place on the 8th of Pousa (i.e., the month when the Sun coincides with the sign Sagittaris, calculated according to the Indian method, explained above.) The winter Solstice, therefore, took place in the year of Bhisma's death about 52 days earlier than it takes place at present, Astronomically, this difference of 52 days can take place only in $\frac{52 \times 60 \times 60}{50}$ or 3744 years. The composition of the Mahabharata, therefore, appears to have taken place about 3744 years back or 1816 B.C., at the latest.

If we are justified in drawing the above conclusion, Sushruta must have been famous and widely known before 1816 B.C. It will therefore not be unreasonable to assert that Sushruta must have flourished prior to 2,000 B.C. The native tradition assigns a far earlier date to this author.

Bhela, Charaka, Sushruta, etc. were only compilers and not original authors.

As regards Charaka, his language is more archaic than that of Sushruta. Hence, it is believed that Charaka preceded Sushruta by several centuries. Charaka was, however, not an original author, but a mere compiler. His treatise is nothing but a synopsis of the highly voluminous works of Bhela, Agnivesha, Harita, etc., who preceded Charaka by several centuries. These authors were also

acquainted with the use of metallic medicines, as will be evident from a reference to the works of Bhela, recently published. Of ancient India, we have no history in the proper sense of the term. It is therefore very difficult to ascertain the dates of such authors as Bhela and a long line of his predecessors. The only course left open to us is, therefore, to rely upon the Puranas which assign to these authors such ancient dates as would not be accepted by the modern scholars.

Nothing in Bhela, Charaka, etc. has been proved to be incorrect.

It would be interesting to note in this connection that not even the slightest portion of the medical principles and pharmacology found in Bhela, Charaka, etc. has been discarded by later authors as incorrect or defective. If this fact is borne in mind, the question which would naturally arise in our minds is this—could such a highly developed system of chemistry and medicine (mainly herbal), as found in Bhela and Charaka grow all on a sudden ? The reply is, of course, in the negative. The experimental stage of Indian Chemistry and medicine must have covered many a century of observations, experiments, and formation of hypotheses and theories.

This shows that Indian Chemistry, organic and

Whatever that may be, a careful study of Sushruta, Charaka, Bhela, etc. cannot but prove beyond the shadow of a doubt that

Inorganic, was more ancient than those authors.

the ancient Hindus possessed a highly developed knowledge of chemistry and medicine, organic and inorganic, many thousand years before the time of Ar-Razi.

*Chemists of the Metallic School.*

An attempt to identify some of the Chemists mentioned in Rasa-ratna-samuch-chaya.

We shall next turn our attention to the chemists who were pre-eminently of the metallic school. In doing so, we can do no better than to make an attempt to identify as many as possible of the chemists and authors of chemical treatises mentioned in the Rasa-ratna-samuchchaya, a book probably compiled in the twelfth century A.D. (see below). The author of this book says that his compilation was based on the treatises of the authors named below, as well as on many other treatises of minor importance :—

( A )

(1) Adima, (2) Chandra-sena, (3) Ravana, king of Lanka, (4) king Rama Chandra, who killed Ravana,* (5) Kapali, (6) Matta,

* There are two different readings on this point, viz.,

१। लङ्केशस्तस्य घातकः।

२। लङ्केशश्च विशारदः।

The chemist, according to the first reading is Ramachandra. He is "Visharada," according to the second. In view of other evidences showing that king Ramachandra was a distinguished chemist, we have accepted the first reading.

(7) Mandavya, (8) Bhaskara, (9) Shurasena, (10) Ratnakosha, (11) Shambhu, (12) Satvika, (13) Narabahana, (14) Indrada, (15) Gomukha, (16) Kambali, (17) Vyari, (18) Nagarjuna, (19) Surananda, (20) Nagabodhi, (21) Jasodhana, (22) Khanda, (23) Kapalika, (24) Brahma, (25) Govinda, (26) Lambaka, and (27) Hari.

The twenty-seven persons named above were renowned authors of chemical treatises as well as great Siddhas or chemists themselves.

**These were great chemists and authors.**

( B )

(1) Rasankusha, (2) Bhairava, (3) Nandi, (4) Swach-Chanda Bhairava, (5) Manthana Bhairava, (6) Kaka-chandiswara, (7) Básu. deva, (8) Rishyashringa, (9) Kriya tantra samuchchayi, (10) Rasendra tilaka, (11) Jogi, (12) Bhaluki, (13) Maithila, (14) Mahadeva, (15) Narendra, (16) Ratnakara, and (17) Hariswara.

The above 17 were better known as compilers of chemical treatises than as original chemists.

**These were compilers of chemical treatises.**

Bagbhat, the compiler of "Rasa-ratna-samuchchaya" says that he consulted the treatises of all the authors named above. It is unfortunate that most of these treatises

Most of these works are no longer extant.

have been lost to us. To compile a systematic history of Hindu chemistry appears therefore to be a hopeless task. We shall however try to utilise the materials available to us at present, and deal with only those of the authors named above who have not yet passed completely into the region of oblivion.

### (1) *Adima.*

He is the earliest of the Chemists whose works were extant at the time of Bagbhat, the junior, (12th century A.D.).

He was known to the Sabians also as the earliest of the Chemists.

He appears to be the earliest of the Siddhas and to have left a treatise which was extant up to the time of Bagbhat, at least. His reputation appears to have spread beyond the boundaries of India. We find in page 399 of Mr. Stapleton's book that there was a belief prevalent amongst the Sabians that the science of alchemy was bestowed by God upon Adimum, the 'Shith'. We are inclined to identify the Indian Adima, the Siddha or Sidh with the Sabian Adimum, the Shith. The epithet of Siddha or Sidh has two meanings in India, *viz.*, a prophet and a chemist. In the latter case, it is a contraction of Rasa-Siddha. The Sabian "Shith" appears to have the same significance and is only a corruption of the Sanskrit word "Siddha". According to the Indians, "Adima, the Sidh" was the

first of the chemists, whereas, according to the Sabians "Adimum, the Shith" was the first of the chemists. Such being the case, it will not be unreasonable to infer that the doctrines of Adima, the Siddha, who was manifestly an Indian, came to be spread, in course of time, amongst the Sabians also, who appear to have a cultural connection with India, even from the pre-historic times. We find in Charaka that one of the several sages who attended a medical conference, which was held by the sages in India at the time of Bharadwasa, was the great sage Kankayana of Balkh. The name Kankayana is evidently of Sanskrit origin. We also find in the Puranas and in the Ramayana and the Mahabharata that there was a close social intercourse in the pre-historic ages between India and the territories to the west of India, such as Afghanistan, Balkh, etc. As for instance, Gandhari, the mother of Duryodhana was the daughter of the King of Kandahar. Soma Dutta, King of Balkh came to attend a Shradh ceremony at Mutra in India. He was a devout worshipper of Siva. His son Bhurishrava became an ally of Duryodhana and fought in the great war at Kurukshetra which took place more than 5000 years ago. In all probability, all these territories formed a part of India in

**Proof of cultural and racial connection of India in ancient times with Kandahar, Bactria, etc. is to be found in the ancient books.**

those days, at least from the racial and cultural point of view.

Adima, according to the ancient Sabians, was a pupil of 'Akhnukh' who was probably "Ushanash" or the sage Shukra of the Hindu Chronicles.

We also find in Mr. Stapleton's book that Adimum, the first chemist, obtained his docrine from "Akhnukh" who may be identified with the sage "Ushanash" or Shukra who was a great scholar and physician, and is said to have attained mercurial body even during his life time. It will be seen in the Puranas that the sage Shukra, although a Brahman by birth, came to be a spiritual guide and preceptor of the javans or non-Indians and of the Asuras or people who did not belong to the race of the Aryas. It is to be pointed out, in this connection, that the letter "S" is often pronounced colloquially as K; as for example, Vrisha (meaning bull) is pronounced as "Vrikh." No wonder, therefore, that Ushanash has been pronounced as "Akhnukh".

(2) *Chandra Sena.*

Chandra Sena, the founder of the Chandra dynasty, may be identified with Chandra Sena, the forger of the

The second name in the first list is that of Chandra Sena. He appears to be the chemist king who forged the famous iron pillar of Delhi, which, according to the short inscription embossed on it, was erected by king Chandra Sena on the mount of Visnupáda (in Gaya). This king Chandra

was the founder of the Chandra dynasty (wrongly translated as lunar dynasty). This Chandra is not to be confused, as is generally done, with Chandra, the moon. The founder of the Chandra dynasty was as human as we are. Chandra Sena, the forger of the wonderful iron pillar, which, though exposed to the inclemencies of a tropical climate for several centuries, has got no rust on it, must have been a great chemist, and can safely be identified with Chandra Sena, the chemist, referred to in the "Rasa-ratna-samuchchaya". But the question which now arises is this: what are the grounds on which we can base our assumption that this Chandra Sena is no other than King Chandra, the founder of the Chandra dynasty? The line of argument which led us to arrive at this conclusion is this: Chandra Sena or King Chandra * erected the iron pillar on a hill in Gaya as a monument of his success in conquest. The pillar was subsequently removed by some one to a place near Delhi. The removal of the pillar from such a long distance must have caused a good deal of trouble and expense. The motive underlying the removal was not an idea of vandalism, as no harm was done to the pillar.

famous iron pillar of Delhi.

The reason why this identification is made.

* "Sena" means Warrior or king.

It was, on the other hand, re-erected very securely in its present position. This must have been done by some king of Delhi with a view to protecting the pillar. The Hindu kings of Delhi or Hastinapur (founded by Hastina, a descendant of king Chandra, the founder of the Chandra dynasty) mostly belonged to the Chandra dynasty. Some of these kings must have taken the trouble of removing the pillar from Gaya to Hastinapur out of respect for the founder of their family. In the long list of kings ruling in Delhi the only person of the name of Chandra is Chandra, the founder of the dynasty. We are therefore forced to identify this Chandra Sen with king Chandra, father of Budha, and grandfather of Pururavá, referred to in the Vedas.

He flourished prior to 5000 B.C. and was the author of Rasa-Chandrodaya, not extant now.

Chandra was about 32 generations ahead of Judhisthira, who flourished about 3100 B. C. The date of Chandra may, therefore, be approximately fixed to be not less than 5000 B.C. He was the author of a treatise named "Rasa-chandrodaya" from which the preparation of "Chandrodaya Makaradhwaja" has been obtained.

(3) *Ravana, King of Lanka.*

Ravana was acquainted

The third chemist in the list "A" is Ravana, king of Lanka. Ravana was

acquainted with the preparation of "Madanananda Modaka", the famous aphrodisiac and tonic which contains, inter alia, mercury, sulphur, and mica. Invention of some other medicines named "Pratapa Lankeswara", "Lankeswara Rasa", "Lanka-dhipeswara Rasa", etc. is attributed to Ravana. These medicines which contain incinerate mercury, mica, sulphur, orpiment, etc., are excellent remedies for leprosy, etc. This shows that Ravana was acquainted with the process of incinerating mercury, (see Nityanath). The authorship of the booklet "Arka-prakasa" is attributed to him. The reference to the treatment of "Phiranga" disease or syphilis found in Arka-prakasha, does not prove that this book is of modern origin. Some are of opinion that the name "Phiranga" was given to the disease prevalent amongst the "Pheringees" (contraction of "French"), an epithet applied by the Indians to the earliest Europeans coming to India. This assumption is far from satisfactory—the French were not the first of the Europeans who came to India. The word "Phiranga-roga" appears to me to be a corruption of "Priyánga roga". "Priyánga" means the limb which is dear. "Priyánga-roga", therefore, means the disease pertaining to the dear limb, *i.e.*, syphilis. Another name

with the process of incinerating mercury.

He was the author of Arka prakasha,

Which cannot be of modern origin, simply because there is in it a mention of phiranga disease,

for this disease was Upadangsha—a name used in Charaka and the other ancient treatises. The epithet Pheringee (or Priyángi) appears to have been coined under an impression that the "Priyánga" disease was more prevalent amongst the Europeans who settled in India than amongst the Indians who were, of course, not at all free from it. An elaborate treatment of this disease is to be found in most of the treatises composed long before the arrival of the Europeans. Those who have studied the Indian systems of medicine very carefully and have a practical experience of the treatment of syphilis will endorse my views that Upadansa and Phiranga or Syphilis is the same disease with minor differences in symptoms in different cases, due to the difference in the degree of virulence of the poison causing the disease and to the difference in the constitutions of the patients.

**an elaborate treatment of which is to be found in treatises composed long before the arrival of the phirangas or Europeans.**

It cannot therefore be stated that syphilis was imported into India by the Europeans. Even taking for granted that this has been so, what proof there is to show that the mention of the disease in Bhava-Prakasha and Arka prakasha has not been interpolations made by modern scribes? It has all along been the tendency of people all over

**The name phiranga might have been substituted**

the world to modernise ancient works by additions and alterations in language as well as in subject matters. There are lots of evidence to show that this tendency has been at work especially in the field of Indian literature. In view of all this, we cannot agree with those who maintain that it was an impostor who elected to remain anonymous and to thrust the authorship of his own work, named "Arka Prakasha" upon Ravana, the legendary king of Lanka.

for the ancient name "upadansa."

Such substitutions or interpolations are not unusual in the history of literature.

Indian tradition and chronicles assign to Ravana an antiquity which is represented by an incredibly long figure. To make a most moderate estimate of this antiquity, we may place him on the other side of 5000 B.C.

Ravana flourished prior to 5000 B.C.

(4) *King Rama Chandra.*

The brightest luminary in the sky we have been gazing at is King Ráma Chandra of Ayodhya, the hero of the celebrated poem "Ramáyana," who killed Ravana in the field of battle. He was sent on exile for 14 years, during the greater portion of which he was in the forest of Dandaka, where he spent his time in the company of great sages who styled him "Dandaka natha" or king of the Dandaka forest. Here he learnt chemistry and alchemy from the sages and especially from two of them, named

While an exile, he learnt chemistry and alchemy from the great sages in the forest of Dandaka.

Kala-natha, and Lakshmiswara who were not only yogis but Siddhas or chemists as well. In those days, the forest of Dandaka was full of hermitages where great saints and yogis lived and spent their time in divine contemplation. The book "Rama-ràjiya" is the greatest heritage left to us by this chemist king. In vain did I look for a reference to this book in Dr. Sir P. C. Roy's History of Hindu Chemistry. Most probably the Dr. is not even aware of the existence of such a book. Reference to this book is to be found in Rasa-Ratna-Samuchchaya and in Bhava-Prakasha. It will appear to a careful student of Hindu chemistry that a considerable portion of our existing knowledge of the science is to be found in this monumental work. There can not be any doubt as to the authorship of this original book. It is not in any way indebted to the other treatises hitherto brought to light, and this shows that it is more ancient than Rasarnava of Shambhu and Rasa-Ratnakara of Nagarjuna. In the preface of Ràma-ràjiya, it has been clearly stated that it is composed by king Ramachandra of Ajodhaya, son of Dasaratha, who learnt Rasa-vidya (metallic chemistry) from such great sages as Kala-natha, and Laksmiswara. Elsewhere in the book, it is stated

He is the author of a great work named Ramrajiya, not yet published.

No reference to this is found in Dr. Sir P. C. Roy's History of Hindu Chemistry.

that the author is one who prepared an image of his wife in gold manufactured by himself ( निजकृतसुवर्णरचितपत्नीविग्रहः ). In Ramayana also we find that Rama-chandra prepared a golden image of his wife Seeta. Ràma-ràjiya throws a light on the question of how this gold was obtained. Rasa-Ratna-Samuchchaya and Bhava-prakasha have drawn much upon this important treatise. Bhava-prakasa has also quoted from Ràma-ràjiya two lines which are significant :—

Rasa-ratna-samuchchaya and Bhava-prakasha have drawn much upon this book.

सत्योऽनुभूतोयोगीन्द्रैः क्रमोऽयं लोहमारणे ।
कथ्यते रामराजेन कौतूहलधियाऽधुना ॥

"The true process of incinerating the metals, as experienced by the great Yogis, is now described by king Rama-chandra, who learnt it, out of curiosity, from those yogis."

No other king of the name of Rama than king Rama of Ajodhya had an occasion to associate himself closely with great Yogis, who always live in the forests.

There is another book the authorship of which is attributed to king Rama-chandra. This is Rasendra-Chintamani. The manuscript which I had to study of this book has it clearly that this was composed by king Rama-chandra, of the Surya dynasty, who was a son of Dasaratha and a disciple

He is also the author of Rasendra-Chintamani, another great book,

of Kala-natha. I find in Sir P. C. Roy's History of Hindu Chemistry that he came across two different kinds of manuscripts, some of which ascribe the authorship to Rama-chandra, whereas the rest of them to Dhunduka natha, disciple of Kala-natha. The name "Dhunduka natha" is evidently a scribe's mistake for Dandaka natha, the name given to Rama-chandra, while he resided in the forest of Dandaka. In reviewing the preface of vol. 1 of my Rasa-Jala-Nidhi, a writer in "Prabasi" of Jaista 1334 asserted that the author of the book was not Dandaka natha, but Dhunduka natha, a Buddhist Bhikshu. This opinion carries very little weight with those who have actually read the book which is full of salutations to Hindu gods and goddesses, without the slightest reference to Buddha or anything connected with Buddhism.

which, in the form in which it has been published, bears a distinct mark of composition by two different authors—one ancient, another modern,—one original, another commentator.

This book bears a distinct mark of composition by two different authors—one ancient and another modern, one original and another commentator. The original composition, which is believed to be that by King Rama-chandra, is in elegant verse, whereas the supplementary one which is of comparatively modern origin, is mainly in prose. These two distinct portions have been woven up into a complete fabric which

is likely to deceive the eyes of a hasty reader, but not those of an attentive and persistent student. The first layer of composition is decidedly of a very ancient origin and has no reference to such modern chemists as Nagarjuna, Nityanatha, etc., whereas the second layer contains such references. Dr. Sir P. C. Roy appears to take the whole thing to be the composition of one and the same author, and the references to Nagarjuna, Nityanatha, and Chakrapani, etc., found in the manuscript forming a supplementary portion of the treatise, have led him to infer that the book was composed in the 14th. century A.D. That Rasendra Chintamani is decidedly older than any other existing treatise on Indian metallic chemistry is evident from the fact that mention has been made in it of 9 different kinds of iron, most of which can no longer be identified, whereas not more than three kinds have been mentioned in books which are comparatively of a modern origin.

**This is likely to deceive a hasty reader in the matter of its date of composition.**

**This is evidently older than any other existing treatise on the subject.**

Rama-chandra was a contemporary of Ravana. The remarks we made about the age of Ravana also apply to Rama-chandra.

**Rama-Chandra must have flourished prior to 5000 B.C.**

(5) *Kapali, author of Rasa-raja-mahodadhi.*

The next author in the list is Kapali,

His work, Rasa-raja-mahodadhi has not yet been discovered.

His work which has not yet been discovered, was evidently extant at the time of Siddha Nityanatha, author of Rasa-ratnákara, No. II, who says that he consulted the work of Kapali, the divine physician.

(6) *Matta.*

Nothing is at present known of him.

(7) *Mandavya.*

He flourished about 1600 B. C.

Nagarjuna, the author of Rasa-ratnakara No. I, who flourished between the 1st and the 4th. centuries B. C. has drawn much upon Mandavya, who flourished at least 1200 years before Nagarjuna, *i.e.*, about 1600 B. C. His works have not yet been discovered. The principle which we intend to follow in the matter of fixing dates in this case is our presumption that at least 100 years elapsed after the compilation of one famous treatise before the necessity for a new compilation was strongly felt.

Principle adopted in fixing dates of some of the chemists mentioned in Rasa-ratna-Samuchchaya.

(8) *Bhaskara.*

He is the author of Rasendra-bhaskara which has not yet been discovered.

(9) *Surasena.*

Nothing at present is known of this chemist.

(10) *Ratnakosha.*

He is not to be confused with Ratnaghosha, a disciple of Nagarjuna, as referred

to in Rasa-ratnakara, No. I. Nothing at present is known of him.

*(11) Shambhu.*

He is the author of the famous book, Rasarnava, another excellent treatise which has escaped the ruthless havoc of times. It is a mine of useful informations to a chemist. We have been thinking of editing the book with a clear English translation. Rasarnava has much in common with Rasa-ratnakara of Nagarjuna. Dr. P. C. Roy thinks that Rasarnava has borrowed copiously from Rasa-ratnakara. We are prepared to prove, from a comparison of the contents of these two books, that the case is quite the reverse. Rasa-ratnakara of Nagarjuna is clearly indebted to Rasarnava, and this is what it should be, because Shambhu, the author of Rasarnava, flourished, according to the principle adopted by us, at least 800 years before Nagarjuna.

**He compiled Rasarnava, another excellent treatise, from which Nagarjuna, author of Rasa-ratnakara, No. 1 borrowed copiously.**

Dr. Sir P. C. Roy did not trouble himself about the authorship of Rasarnava and he thinks that the book was composed in 1200 A.D. In the face of clear evidences of a convincing nature, we cannot support Dr. Roy in this assumption.

In proceeding to show that the medicinal use of mercury was known to the Indians even at the time of Baraha-mihira, the well-

known astronomer, who died, according to native tradition and chronicles, in the first century B. C., or at the latest, in 587 A.D., as maintained by the western scholars, Dr. Roy has justly quoted a prescription of an aphrodisiac from Brihat Siddhanta of Baraha-mihira (*vide* page LXXXI, Vol. I of Dr. Sir P. C. Roy's book). The doctor, however, did not enquire into the source of Baraha-mihira's information. Had he done so, and had he succeeded in his attempt, the whole of his book would have been written differently.

Baraha-mihira (1st century B.C.) was indebted to Nityanatha,

The prescription given by Baraha-mihira is a brief description of the medicine, named "Madana-Sundara-Rasa", the use of which has been described in detail in "Rasa-ratnakara" of Nityanatha, who has been placed in the 14th century by Dr. Roy. He must have flourished before Baraha-mihira's death, which took place in 587 A.D., if not in the first century B.C.

who was indebted to Nagarjuna (4th Century B. C.) and to Shambhu,

Nityanatha has given the source of his information in this way: "whatever has been stated by Shambhu in Rasarnava*......

* Dr. Roy's translation of this line has not been happy. It runs as follows:—"whatever has been revealed by Siva in Rasarnava"......Here "Sambhu" does not mean Siva, the God, but Sambhu, the human chemist, referred to in several books.

said by Nagarjuna... ..." have been consulted by me.

It appears from the above that Nityanatha, who flourished long before 587 A.D., considered Shambhu to be an earlier authority than Nagarjuna, who flourished, according to the "Raja-tarangini", in the 4th century B.C. Shambhu occupies the 14th, whereas Nagarjuna the 18th position in the list. In accordance with the principle we have been acting upon, Shambhu may be placed between the 12th and the 15th centuries B.C. He is not to be confused with the God, Siva, one of whose names is Shambhu.

who may be placed in the 12th century B.C and is not to be confused with the God, Siva.

(12) *Satvika,* (13) *Narabahana,* (14) *Indrada,* (15) *Gomukha, and* (16) *Kambali.*

At present we know nothing about these five chemists. They appear to have lived between 1000 to 500 B.C.

(17) *Vyari.*

He was a great chemist and an authority on the chemistry of gems. He may be identified with the well-known grammarian of that name. We have not yet found out any book alleged to have been written by him. He may be taken to have preceded Nagarjuna by about a century, and may therefore be placed in the 5th century B.C.

He was a Grammarian and an authority on the chemistry of gems.

### (18) *Nagarjuna.*

Nagarjuna, the Buddhist, flourished between the 1st and the 4th centuries B.C.

He was the author of Rasa-ratnakara (No. 1). He flourished according to Raja-tarangini (the history of Kashmir, composed by Kalhana in the 11th century A.D.), in the 4th century B.C., and according to some of the modern scholars, in the 1st century B. C. In his book, he has acknowledged his debts to Mandavya, and Shambhu (author of Rasarnava). In complex chemical processes, he cites his preceptor as authority. He refers to mercury as the semen of Mahadeva. This is undoubtedly a Hindu conception. He was a Buddhist, and as such, cannot be said to have coined this epithet of mercury. He must have learnt the science of mercury from the Hindus, and especially from the works of Mandavya, and Shambhu.

He learnt the science from the Hindus, and especially from the works of Mandavya and Shambhu.

Baraha-mihira flourished in the 1st Century B. C.

According to the Indian almanacs, King Vikramaditya of Ujjayini defeated the Scythians, 1985 years ago, *i.e.*, in 57 B.C. Baraha-mihira, who was one of the nine gems of the court of this king, must have, therefore, flourished in the 1st century B.C. Modern scholars, however, have placed him six centuries later. According to these scholars, the great astronomer died in the year 587 A.D. In his Brihat-sanghita, Baraha-mihira has given a composition of

a tonic and aphrodisiac, which contains, among other things, incinerated mercury, pyrites, mica, and bitumen. This medicine, which is named Madana-Sundara-Rasa, has evidently been borrowed, as has already been pointed out, from Rasa-ratnakara of Nityanatha. Nityanatha was a Bengalee chemist, as will be evidenced from his reference to the "jhola" (soup) of fish, an expression used by the Bengalis only. Baraha-mihira lived in the province of Malwa. A few centuries must have elapsed before the fame of the Bengali Nityanatha's compilation reached Malwa. Nityanatha, therefore, must have flourished between the 3rd century B.C. and the 4th century A.D. Nityanatha says that one of the authors he consulted was Nagarjuna, who must have composed his treatise long before the 4th century A.D. In view of all these facts, we have no hesitation to assert that Rasa-ratnakara, the authorship of which is attributed to Nagarjuna, must have been composed during the lifetime of Nagarjuna, i.e., between the 4th century B.C., and the 1st century A.D.

**He quotes from Nityanatha who owes his debt to Nagarjuna's Rasa-ratnakara, which must have been compiled prior to 1st Century A. D.**

As regards the exact date of Nagarjuna, we feel constrained to make a few observations which might be taken into consideration in arriving at a final decision on the point :

**Exact date of Nagarjuna. Raja-tarangini says he lived in the 4th Century**

B. C. and was a contemporary of Kanishka,

According to Rajatarangini, the history of Kasmir, Nagarjuna was a contemporary of King Kanishka, and flourished 150 years after the death of Buddha. If we rely upon this statement, Nagarjuna may be placed in the 4th century B. C. But there is one thing which stands in the way of our accepting the above statement to be true, *viz.*, the date of Kanishka, which has been fixed by modern scholars to be about 400 years after Buddha's death. Such being the case, we shall have to accept one of the following conclusions that can possibly be drawn from the data at our disposal :—

who reigned according to modern history in the 1st Century B. C.

(1) Nagarjuna flourished 150 years after the death of Buddha, and he was not a contemporary of Kanishka, who reigned in the 1st century B. C.

(2) The former was a contemporary of Kanishka, and flourished, therefore, in the 1st century B.C. and not in the 4th century B.C.

(3) The date of Kanishka, as referred to above, has been fixed wrongly. He may have reigned, as the Raja-tarangini says, in the 4th century B.C.

(4) Kanishka, as referred to in the Raja-tarangini, may be a person different from Kanishka, who has been placed in the 1st century B.C.

If we accept the third or the 4th of the above conclusions to be true, the authenticity of the Raja-tarangini is maintained, but if we accept the first or the second to be true, the authenticity of the book is discarded, at least partially.

The true spirit of a scientific investigation requires that we should either rely upon the authenticity of the Raja-tarangini or discard it altogether.

**Either rely upon the authenticity of Raja-tarangini or discard it altogether.**

It would not be quite safe to accept one half of Raja-tarangini's statement to be true, and to discard the other half. It is therefore for our consideration whether we are to accept or reject the testimony borne by the Raja-tarangini with regard to the age of Nagarjuna. In other words, we shall have to look for evidence in support, or in rejection, of the assertion that Nagarjuna flourished about the 4th century B.C. There is one evidence at least which lends support to the authenticity of the Raja-tarangini, *viz.*, the evidence furnished by the Indian almanacs with regard to the age of Baraha-mihira, who was one of the nine gems in the court of the King, in whose name an era, named the "Samvat", was inaugurated 1985 years ago. The Indian almanacs are annual records kept from time out of memory, throughout the different parts of India, and, as such,

**Baraha-mihira lived, according to the Indian almanacs, in the 1st Century B.C.**

leave very little room for miscalculations about the exact number of years following the institution of the era, as recorded in them.

In the absence of printing press and easy means of communications, makers of almanacs all over India, could not have been uniform in making a mistake about the number of years regarding the Vikrama Samvat.

The fact that almanacs in the different parts of India have all along agreed, even before the introduction of the printing press with regard to the exact number of years following the commencement of the era shows that no such mistake was committed, consciously or unconsciously, in the calculation of the "Samvat" and the other eras recorded in the Indian almanacs. Those who have had an opportunity of looking into manuscript almanacs, prepared long before the introduction of the printing press into India, will, I have no doubt, endorse my views. In the absence of the printing press, the railways, and the other means of communication between the different parts of this vast country, the makers of almanacs could not have been uniform in a particular mistake, all over the country. Having regard to all these facts, we have, I believe, no justification for repudiating the evidence furnished by the almanacs about the age of Baraha-mihira and his patron, the king who instituted the "Samvat" era.

Nityanatha preceded Baraha-mihira, and

Baraha-mihira, as has already been said, lived about 57 B. C., according to the Indian almanacs. He was indebted to

Nityanatha, and Nityanatha was indebted to Nagarjuna, who must have flourished, at least, a few centuries before Baraha-mihira. If we are not quite wrong in the line of arguments followed here, I do not see any reason why the testimony borne by the Raja-tarangini with regard to the age of Nagarjuna should be discredited. In such a case, we shall have to accept, as a matter of course, the third or the fourth conclusion stated above.

Nagarjuna preceded Nityanatha.

Nagarjuna cannot, therefore, be later than the 4th Century B. C.

*(19) Surananda (20) Nagabodhi*

We know very little of the two.

*(21) Jasodhana or Jasodhara.*

He was the author of Rasa-Prakasa-Sudhakara and was a resident of a fort, called "Jeerna", situated in Surat (Sura-rastra). He may be placed in the first century B.C.

*Nitya-natha.*

The problem of the age of Nityanatha is somewhat puzzling. He must have flourished, as has previously been shown, between the 3rd century B.C. and the 4th century A.D. His compilation, viz., Rasa-ratnakara, No. 2 which is one of the biggest of all the ancient compilations, does not bear any mark of indebtedness to Jasodhara, and the vice versa. It appears that the interval between

He lived probably in the 3rd century B.C., and compiled a very important treatise. His name is not included in the list.

the times of these two chemists was so short that the fame of one's work could not possibly reach the ears of the other, especially on account of the distance between the provinces to which they belonged, viz., Bengal and Gujrat respectively.

His name has not been included in the list of chemists given at the outset of Rasa-ratna-samuchchaya. In all probability, Bagbhat, the author of Rasa-ratna-samuchchaya, had no knowledge of Nityanatha's works.

### (25) *Govinda or Bhikshu Govinda.*

Tradition identifies this great chemist with the Guru of Sankaracharya, the great philosopher of the 8th century A.D. Dr. Roy objects to this identification, on the ground that (1) there could not be so much progress of chemical knowledge in the 8th century A.D., and

He is the eighth in the list from Nagarjuna. If Nagarjuna flourished in the first century B.C., Govinda should have flourished in the 8th. century A.D., at the latest. He was a Sannyasi and a preceptor of Sankaracharjya, who flourished in the 8th. century A.D. This corroborates the validity of our assumption based on the principle we have adopted for the purpose.

Dr. Sir P. C. Roy is not inclined to identify Govinda, the chemist, with Govinda, the preceptor of Sankaracharya, on the following grounds ;—

(1) It is questionable whether at such an early date (i.e., 8th. century A.D.) the progress of chemical knowledge, as revealed in

Rasa-hridaya by Bhikshu Govinda or Bhagabat Govinda, had been attained in India ; and

(2) In the colophon at the end of one of the three manuscripts discovered, it is stated that the book was written by Bhikshu Govinda, at a respectful request made by Madana-ratha, king of the Kiratas, who himself was a great chemist. This is followed by an expression "Let Tathagata (Buddha) be for what is good". From this Dr. Roy has inferred that Govinda, the author of Rasa-hridaya, was of the Buddhistic persuasion. "We have no valid reasons", says Dr. Roy, "to believe that Sankara, the sturdy champion of Brahminical faith . . . . . . . . should have sat at the feet of a Guru of the opposite creed".

(2) that it was not likely that Sankaracharya should learn from Govinda, who, according to Dr. Roy, was a Buddhist.

To the first of the points raised by Dr. Roy against the identification of Govinda, the author of Rasa-hridaya, with Govinda, the spiritual guide of Sankaracharya, our reply will be only a repetition of what we have already proved beyond the shadow of a doubt that long before the death of Barahamihira, who died, according to Dr. Roy himself, in 587 A.D., chemical knowledge of the Hindus had attained such a state of development as has not been surpassed by anything contributed by later compilers.

Reply to Dr. Roy : (1) The chemical knowledge of the Hindus reached its climax long before the 8th century.

(2) (a) Govinda, being a Sanyasi, did not belong to any particular creed or caste.

Our reply to the second point raised by Dr. Roy is that (a) Govinda, the preceptor of Sankaracharya was a Bhikshu or Sannyasi, and as such, did not belong to any particular creed or caste. A real Sannyasi has no caste and no creed—his is a universal religion. Apart from that, a real Hindu, not to speak of an ascetic like Sankaracharya, while adhering rigidly to the customs and manners prescribed by his forefathers, which are calculated to foster the well-being of the society as a whole, should always be ready to learn from wise men of any creed or caste. Instances of this mentality are not rare even in our days.

(b) Moreover, there is no clear indication in Govinda's writings that he was a Buddhist.

Moreover, to say that "Let Tathagata be for the good," which the author might have said to please the Buddhist king, does not indicate that the former was of Buddhistic persuasion. We should not forget that Buddha has all along been revered by the Hindus as an incarnation of the Deity. It cannot be said that Jayadeva was the earliest person to whom the idea occurred for the first time. He could not have taken, in defiance of the religious notions existent at his time, the bold step of composing a hymn to Buddha, regarding him as an incarnation of the supreme Deity. The field had evidently been prepared for the attitude which was taken by Jaya-deva, one of the most ardent

devotees of Vishnu. As a matter of fact, Sakya-sinha, one of the several Buddhas, did not introduce any new system of religion into India. He himself was a Hindu and only adopted the philosophy enunciated by the previous Buddhas who were nothing but a class of wise Hindus. The activity of Sankaracharya was not directed against Buddha himself, but against the Buddhistic philosophy, which was not propounded by Sakya-sinha but had been in existence for several centuries before his birth, and against the awfully corrupt practices resorted to by the Buddhists of later days, in direct contravention of the teachings of the Buddhas. What led to the popularity of Sakya-Sinha, the Buddha, was his piety, his self-renunciation, his denunciation of the practice of animal sacrifices, which, of course, had never been approved of by the society as a whole, and the simple mode of his teaching the ignorant mass, which presented a contrast to the attitude the Indian sages generally take in keeping themselves aloof from the society.

(c) Apart from that, Buddha himself was a Hindu and his followers in India were also Hindus.

Taking all these facts into consideration, we cannot discard the truth of the time-honoured tradition that Govinda, the chemist, was the spiritual guide of Sankaracharya, especially in view of the fact that the age of

Govinda, the chemist, was, therefore, no

other than Govinda, the philosopher.

the chemist Govinda coincides with that of Govinda, the philosopher of the 8th century A.D.

The books which Govinda is said to have compiled are two, *viz.*, Rasa-Hridaya and Rasa-Sára. The authorship of Rasa-sára is attributed by Dr. Roy to a different Govinda. We have been giving our careful attention to this point, and decide to wait before we arrive at a decision on this matter.

### *Bagbhat, the junior.*

If we were to make any addition to the list of chemists in group A, we should have put the names of Nityanatha, author of Rasa-ratnakara, No. 2, whom we have placed in the 3rd century B.C., of Bagbhat, the compiler of Rasa-Ratna-Samuchchaya, and of Ananta deva suri, author of Rasa-Chintamani.

Bagbhat, the senior, author of "Astanga-Hridaya"; flourished about 3100 B.C.

Bagbhat, the compiler of "Rasa-ratna-samuchchaya" is to be distinguished from Vriddha (ancient) Bagbhat, the author of Astanga-Hridaya, a compilation mainly based on Charaka, Sushruta, and their predecessors, *viz.*, Bhela, Harita, Agnivesha, etc. According to tradition, Vriddha or senior Bagbhat was the court physician of king Judhisthira, who flourished about 5000 years ago or in 3100 B.C.

According to the principle we have already adopted in determining the age of the chemists mentioned in group A, we may place Bagbhat, the junior, in the 11th or 12th century, A.D. This agrees well with the statement made by Kalhana, author of Raja-tarangini, that Bagbhat lived at the time of King Jayasinha (1196-1218 A.D.).

**Bagbhat, the junior, author of Rasa-ratna-samuchchaya, lived in the 11th or 12th century, A.D.**

*Ananta Deva Suri.*

It appears that Ananta Deva Suri (not Madananta Deva Suri, as stated erroneously in Dr. Sir P. C. Roy's book), author of Rasa Chintamani, was a contemporary of Bagbhat. There is no trace of anything being borrowed by Ananta Deva from Bagbhat, and the vice versa. At the end of his book, Ananta Deva mentions that he was a physician of great repute and lived in the Kanakáchala or mount of Kanaka (modern Kanakhala). We have no hesitation in assuming that he also flourished in the 12th century A. D.

**Ananta Deva Suri who lived in the mount of Kanaka (Kanakhala) might be a contemporary of Bagbhat, the junior.**

Thus, we see that almost all we know of Hindu Chemistry is to be found in works compiled even before the advent of the Mahomedans in India. A lot of treatises on metallic chemistry was, of course, compiled during the Mahomedan period of the Indian history, but these treatises do not contain

**Almost all we know of Hindu chemistry was compiled in treatises even before the arrival of the Mahomedans in India.**

anything original. Even if we find something new and original in the books compiled during the Mahomedan period, it cannot be said that these things were learnt from the Mahomedans and are of external origin. On the other hand, these things had been transmitted verbally, from time out of memory, through generations of chemists, and compiled by the authors who thought it desirable to put them in writing.

**New things found for the first time in treatises compiled in the Mahomedan period do not indicate that they are of foreign origin.**

*Rasa-jala-nidhi.*

**Rasa-jala-nidhi, my own compilation, contains many things that are new but not of foreign origin.**

Let me illustrate more clearly what I mean by my own case. My publication, entitled "Rasa-jala-nidhi", which is by far the most systematic and comprehensive of all the treatises on the metallic chemistry of the Hindus, contains much which will appear to every one, excepting myself and my preceptor, to be absolutely new and original. As a matter of fact, there is nothing in my compilation which I can conscientiously claim to be my own invention, except of course the language in which the new things have been expressed. The materials, which will appear to be original in my book, have been learnt orally from my preceptor, who learnt it similarly from his own precepter, and so on. These things have been transmitted verbally to us by our

forefathers, through generations of chemists teaching the science to their disciples. It will not be right for a critic to say after a few centuries that much of what is to be found in my compilation must have been learnt from the Europeans and are of external origin, in as much as they are not to be found in the previous compilations. Any one acquainted with the conservative mentality of typical Hindus will have no difficulty in realising that the spirit of a true Hindu will revolt at the idea of incorporating something of foreign origin into a treatise on a branch of human culture believed to be bequeathed to them by their ancestors. Whenever they have borrowed anything from foreigners they have acknowledged the debt as such.

*Ar-Razi.*

Next we turn our attention to the chemistry in Iraq and Persia, as culled from Mr. Stapleton's remarkable paper on Ar-Razi, and examine whether Ar-Razi's works bear any trace of a debt due to India. This debt, however, is not denied in the field of vegetable chemistry. Mr. Stapleton says that Ar-Razi was acquainted with both Sushruta and Charaka. What Mr. Stapleton is not prepared to admit is that Ar-Razi was

Ar-Razi was acquainted with Charaka and Sushruta. It will appear from the following that he was also indebted to the Hindus

for his knowledge of metallic chemistry :

indebted to the Hindus for his knowledge of metallic alchemy as well. The reasons why I am inclined to say that Ar-Razi was equally indebted to the Indians for his knowledge of metallic chemistry are as follows—

(1) His "marqua shisha" is a corrupted form of Sanskrit "makshika"

(1) Ar-Razi uses the word "marqua shisha" to denote pyrites. The word is clearly a corruption of the Indian "makshika" which means the same thing i.e., pyrites. It will be seen that the word "makshika" is to be found in Charaka, Sushruta, and all the other books on Indian medicine.

(2) His "shakk" is nothing but the Sanskrit "Shankha" (arsenic stone).

(2) Shakk (arsenic or oxide of arsenic)—This is evidently a corruption of the Indian "shankha" which means "gouripashana" or sulphide of arsenic. The word in Sanskrit has two meanings viz., conch shell and arsenic stone. Mr. Stapleton says (vide footnote, page 352) that the late Mahamahopadhyaya Pandit Satish Chandra Vidyabhushana reported to him that the word "shankha" in Sanskrit possessed only one meaning, viz., "conch shell," and "that it is never applied to a poison." The late Pandit probably looked for the word in a dictionary which does not contain many of the technical terms mainly used in astrology, chemistry, etc. The ancient books on Indian chemistry are full of references to "sankha

visha" or "shankhi," meaning Sulphide of Arsenic.

(3) *Quili*—The Persian word means an alkali (from Persian "Alquili"). The Indian word "khara" which is of a more ancient origin, means the same thing. The word quili is therefore a corruption of "khara" or "khari."

(3) His "quili" is nothing but the Sanskrit "khara" or "khari."

(4) *Measures of weight in the works of Ar-Razi and other Persian Chemists.*

(4) His measures of weight are based on those adopted by the Indian chemists.

It is interesting to note that measures of weight, as found in the works of Ar-Razi and other Persian chemists, are based on those adopted by Charaka and the other Indian chemists. The Persian "dirham" is a contraction of the Sanskrit "dharan," and the Persian "mann" is the same as the Indian "mana" or "manika." According to the Persians, 128 dirhams make one pound or ratl and two ratls make one "mann." That is also the case with us; 128 dharans make one anjali, and two anjalis make one mana or manika (a seer).

(5) *Murdasanj*

(5) His "murdasanj" is a corrupted form of the Sanskrit "mudra sankha" or "mriddara shringaka".

The Persian name appears to have been derived from the Sanskrit "mriddara shringaka," an ore of lead, found by the side of the Arvuda hills in Gujrat, popularly

known in India by the name of "mudra shankha."

(6) His "qualimia" is the same as the Sanskrit "kalima".

(6) *Qualimia*

The Persian word means dross from all "Bodies" during their purification. The word is a slightly corrupted form of the Sanskrit "kalima," meaning the impure part of a substance. It has been derived according to the rules of Sanskrit Grammar, from the word "kala," meaning "black."

(7) His "lazward" is the same as the Sanskrit "rajawarta".

(7) *Lazward* (*Lapis Lazuli*).

The Persian word means a stone with bright eyes. It is evidently a corruption of the Sanskrit "rajavarta", the etymological meaning of which is a stone with bright spots rolled spirally inward. The word "lazward" is also in use among the common people of India. Reference to this stone is to be found in almost all the ancient Indian treatises.

(8) His "Hindi" salt is the Sanskrit "Saindhava", and his vaidi salt is the Sanskrit "vida".

(8) *Salts—Hindi and Baidi.*

Of the several salts named by Ar-Razi two arrest our attention, *viz.*, Hindi and Baidi. The former is perhaps the rock-salt or Saindhava found in Sindh and the Punjab, and the latter is evidently the salt prepared by the "Baids" *i.e.*,

Indian physicians, and refers no doubt to the "vida" salt which is used by the Indian physicians and prepared artificially in India itself.

(9) *Talq.*

(9) Persian "talq" is a corruption of the Indian "talaka".

Alberuni is of opinion that "talq" is the same thing as the Indian "Talak". Whether it is so or not, the Persian word "talq" is evidently derived from the Indian "Talak", which is a contraction of Hari-talak (orpiment).

(10) *Tutiya.*

(10) His "tutia" is nothing, but the Indian "tutthaka".

It has been derived from the Sanskrit "tutthaka" (sulphate of copper.) We have it on the authority of Ibn Wafid (1050 A.D.) that mines of tutiya were found on the shores of the Indian ocean (*vide* foot-note, page 350 and also page 372, Stapleton). It appears, therefore, that the Persians used to obtain this mineral from the Indians, who had evidently been acquainted with its use at an earlier date and must have given it their own name. We have no doubt that this name was tutthaka or "tutiya", a name which is still used by those Indians who are not acquainted with the Sanskrit name, "tutthaka". A reference to tutthaka is to

be found in some of the earliest treatises on metallic chemistry.

(11) His ideas were influenced by the religious beliefs of the Sabians, which were kindred to those held by the Hindus.

### (11) *The religious beliefs of the Sabians (Harranians or Chaldeans).*

Mr. Stapleton says that the ideas of Ar-Razi were to a certain extent influenced by the religious beliefs of the Sabians, who believed that God was both one and many in the different phenomena (*i.e.*, the planets and stars). This is exactly the views of the Hindus even to the present day. The stars are worshipped in India from time out of memory, not for the belief that they are the shapers of human destiny, but for the belief that the great God (ग्रहरूपः सदाशिवः) has manifested Himself in them. They are not shapers but only indicators of human destiny (ग्रहास्तु फलसूचकाः फलस्य दायका नहि ।) The pictures on the walls of a Chaldrean temple of Saturn, *viz.*, that of a black Indian old man holding an axe in the hand, etc., are exactly in keeping with the conception of Saturn found in the ancient treatises on Indian Astrology, such as, Brihat Parasara Hora Shastram*, a treatise

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* I have edited this most difficult of the astrological books with a Bengali translation, a portion of which was published some eight years back in the Sahitya Sanhita of Calcutta.

compiled by the sage Parasara, son of Bharadwasa.

(12) The ancient Sabians or chaldrians had some connection with India and they went on pilgrimage to a temple of Saturn in Brahmanabad (in Sind in India).

I find in Mr. Stapleton's book that according to Al-Masudi, the ancient Sabians had some connection with India. They went on pilgrimage to a temple of Saturn in Brahmanabad, the then capital of the Sind province. It was situated in an old channel of the Indus (left bank) about 40 miles N. E. of the modern Hyderabad, and therefore only about 100 miles to the south of Mohenjo-dero, where many relics of prehistoric civilization have recently been discovered. Mr. Stapleton appears to be of opinion that the city of Brahmanabad (literally, a settlement of the Brahmanas) which contained a temple of Saturn to which the Sabians used to go on pilgrimage was an outpost of Mesopotamian civilization. This is a conclusion which I do not think is warranted by Al-Masudi's statement that "the Sablans had some connection with India and that they went on pilgrimage to a temple of Saturn in Brahmanabad or Al-Mansura". We are inclined to draw from the above statement a conclusion which is quite the reverse of what Mr. Stapleton has arrived at. It appears to me that the ancient Sabians or

It appears that the ancient

Sabians were an off-shoot of the Indian race.

Chaldrians were originally an offshoot of the Indian race and that they could not cut off their connection with India for several centuries after they had settled in Mesopotamia. They used to go on pilgrimage to the land on which they were dependent for their origin and culture; otherwise they would not have taken the trouble of going on pilgrimage to a temple of Saturn in India, while they had their own temples in Mesopotamia itself. As a matter of fact, worship of planets and erection of temples for the purpose of such worship were prevalent throughout India even from the commencement of Indian civilization. There are many such temples even to this day in India. Calcutta has got at least one temple of Saturn where the image of the planet is worshipped by hundreds of votaries. It is on the Nimtala-ghat Street. The earliest temple of Saturn existent to this day is the famous temple of "Konarak" in Orrisa. It is now in ruins and has long been abandoned. The name "Konarak" has been a puzzle to the general public. It has been explained in many ways. None of these explanations is satisfactory. The real meaning of the word "Kanarak Mandir" is the temple of the planets Saturn and Sun. The

Worship of planets is prevalent in India even to this day.

The earliest temple of Saturn is the "Konarak" temple in Orissa (Kona-Saturn, arka-sun).

word is a compound one and consists of two words, *viz.*, Kona (Saturn) and Arka (Sun). The word "Kona" has two different meanings, *viz.*, (1) an angle, and (2) Saturn. The second meaning is not familiar to us, but it is to be found in the Puranas*. Whatever that may be, the temple of "Konarka" was a temple dedicated to the two planets, *viz.*, Saturn and Sun. According to the Puranas, it was built by Shamba, son of Sree Krishna, with a view to worship the planets in the hope that the action might lead to his being cured of leprosy from which he had been suffering. Shamba was born about 5000 years ago, *i.e.*, a few years after the commencement of the Kali era which began to be counted 5028 years ago.

**which was built by a son of Sree Krishna about 5000 years ago.**

That the Mesopotamians learnt the worship of the planets from the Indians is apparent even from the very names of the planets; as for instance, the Sabian name for Jupiter is "Mushtari" which is a corruption of Mritwari (*i.e.*, enemy of death), one of the Indian names for Jupiter. The name for Mars is Marrikh which is a corruption of one of the several Indian names

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* कोणोन्धः पिङ्गलो बभ्रुः कृष्णो रौद्रोऽन्तको यमः ।
सौरिः शनैश्चरो मन्दः पिप्पलादेन संस्तुतः ॥

given to the same planet, *viz.*, Mrirak (मृड्क:), a name which is also given to the God Siva. The Sabian name for Venus is "Zuhrah" which is a corruption of the Indian name Shukrah (pronounced by the Tamils as Zukrah).

**Proof of a racial and cultural dependence of the West on India :—**

That there was, in pre-historic ages, a racial and cultural connection between India and some other countries to the west of India, not to speak of Persia and Chaldria only, will be evident from the facts given below ;—

**(1) My assumption in Chapter I that the island of Crete was an Indian settlement is corroborated by the remains of a building unearthed in Harappa, the mode of construction of which is the same as in a class of buildings in ancient Crete.**

(1) It has been pointed out in Chapter I that, in pre-historic times, Baka, an Indian Vaisya, by caste, was the ruler of the island of Crete, which appears to have been a settlement of the Indians. This is a conclusion which I arrived at about 8 years ago, in a paper contributed to a Bengali magazine, named "Manasi-o-marmabani,"—a few years before the excavation of Mohenjo Dero and Harappa. The reports of Sir John Marshall and others on the findings in those two and other places in Sind amply corroborates my views that the island of Crete, at least, was an Indian colonization. We understand that of all the remains of buildings unearthed in Harappa, there is only one which is comparatively in a good condition. This is 168 feet in length from north to south and

136 feet in breadth, from east to west. The mode of construction and the architectural peculiarity found in this building markedly resemble those which characterised a class of buildings in ancient Crete. This is an additional proof of the island of Crete having been colonised by the ancient Indians. (2) It has also been proved in Chapter II that in pre-historic times a large body of Indian emigrants, probably in more than one batches, came to settle, in course of their wanderings, in Persia, Arabia, Phoenicia, Asia Minor, Egypt, and Europe, and naturally brought with them much of the Indian civilization and culture. (3) Apart from the facts brought to light in Chapters I and II of this paper, I would refer here to the views expressed by Mr. H. R. Hall, the renowned archeologist, in his "Ancient History of the Near East" (pages 171-174), although I do not agree with him in all that he says. He maintains that a branch of the Indian Dravidians came to conquer in pre-historic times, Persia and Babylonia, and laid in those places the foundation of the Persian and Babylonian civilization. These Indians, according to Mr. Hall, had attained a high state of civilization before they conquered Persia and Babylonia. They were acquaint-

(2) A great number of the Indians whose descendants are now called the Gipsies, left India in pre-historic times, and settled almost in every country to the west of India.

(3) Mr. Hall proves that a batch of highly civilized Indians conquered Persia and Babylonia and laid the foundation of the ancient civilization in those two countries.

ed, at the time of the conquest, with the use of the various metallic weapons, and could express their ideas in writing by means of a sort of pictogram.

Having regard to all these facts, we should be sufficiently justified in holding that the people of ancient Persia, Asia Minor, etc. were indebted to the Indians, not only for their chemistry and astronomy, but also for much of their culture and civilization.

Mr. Stapleton thinks that the epithet of Semen of Siva was given to mercury about 1200 A.D.

Mr. Stapleton thinks that the name of "Semen of Siva" was given to mercury about 1200 A.D. I have already proved that even Nagarjuna the Buddhist, not to speak of the more ancient Hindu authors, used this expression in his "Rasa-ratnakara", which must have been compiled at least in the first century B.C. True, Doctor Sir P. C. Roy does not think that Rasa-ratnakara was composed so early as that, but even Dr. Roy has pointed out (See page XLIII, Vol. 2) that in the Library of Nepal there is a manuscript of a tantra named "Kubjika tantra" in which mercury has been described as the generative principle of Siva. This manuscript is written in Gupta character and, in the opinion of Mahamahopadhyaya Pandit Dr. Haraprasad Shastri, who brought it to light,

This was not so.

This epithet is to be met with in all the ancient works including those of Nagarjuna who lived in the 1st century B.C., at the latest.

It is also to be found in Kubjika

was copied, about the 6th century A.D. The original book might have been composed at least two centuries earlier *i.e.*, in the 4th century A.D. The idea of Semen of Siva therefore must have been conceived long before the 4th century, A.D. Now, this tantra has also a clear reference to the incineration of mercury after its exhaustion with six times its weight of sulphur. This presupposes a knowledge of all the eighteen different kinds of mercurial operations *i.e.*, the whole science of mercury as known to the ancient Indians (See Vol. 1 of my Rasa-jala-nidhi) and specially the knowledge of such apparata as Nabhi Jantram, Jala Jantram, Kachchapa Jantram, Patana Jantram, etc., the invention of which has been attributed to such ancient chemists, as Nandi (a mythical person), Shambhu, author of Rasarnava, Nagarjuna, author of Rasa-ratnakara, etc. It is therefore manifestly clear that the treatises of Shambhu and Nagarjuna must have been composed long before the 4th century A.D.

**tantra which must have been compiled prior to 400 A.D.**

As to the contention that quick-silver is nowhere found native in India, I am to point out that Rasaprakasa Sudhakara and Rasa-ratnasamuchchaya, etc., testify to the fact that there had been mines of mercury in the Himalayas and in the eastern hills,

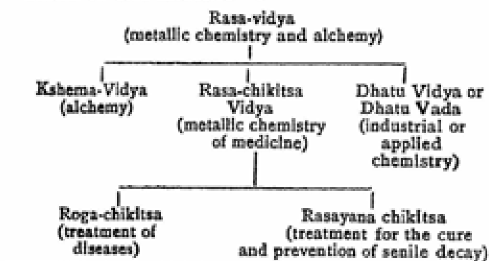
**At present quick-silver is not found native in India, but there was a time when it was.**

in days long gone by. These must have been exhausted long ago. Cinnabar used to be imported into India from Dardestan, a province to the north of Kashmir, for the purpose of extraction of mercury, after it had been extinct in India proper.

In view of all these facts, it will not be unreasonable for us to hold that chemistry, organic, as well as inorganic based mainly on the use of mercury, as recorded in the Indian medical treatises, was of Indian origin and could not have been imported from outside India.

**Chemistry, organic and inorganic was of Indian origin.**

It will be interesting to close the present chapter with a diagram showing the relation in which the different branches of Rasa-vidya (metallic chemistry and alchemy) stand to one another* :—




* रसविद्या त्रिधा प्रोक्ता धातुवादश्चिकित्सितम् ।
दुर्लभा क्षेमविद्या च सर्वविद्यासु सा वरा: ॥
चिकित्सा द्विविधा ज्ञेया व्याधीनां जरसस्तथा ।
जराव्याधिविनाशिनी चिकित्सा हि रसायनम् ॥

## CHAPTER IV.

### WORDS BORROWED FROM SANSKRIT.

Philologists have propounded the theory of a common Indo-European Stock from which they assume the origin of the Europeans and of the Indo-Aryans. The grounds on which they have based their theory are the existence of a great many words which are found common to Sanskrit and the European languages, and a striking similarity to be noticed in the physical features of the individuals belonging to the races concerned. In the absence of data more satisfactory than hitherto available to us, it appears to me to be more than impossible to have a peep into the obscure past and to pass our verdict on the tenableness or otherwise of the theory concerned. What I propose to do here is to examine only a few of those English words which appear to me to have been borrowed ready-made from Sanskrit. Languages are not to be declared akin, as Dr. Tucker rightly says, in virtue of a few superficial resemblance of vocabulary, however curious or striking. I say "borrowed," simply because, etymologically, they cannot be said to be traceable to kindred roots which may

**Examples of a few English words which appear to have been borrowed ready-made from Sanskrit.**

be regarded as common to both the languages and, as such, cannot be supposed to have been in existence at the time the forefathers of the hypothetical Indo-Aryan race were supposed to have lived together. Some of these are compound words, the component parts of which have been joined together according to the rules of Sanskrit Grammar, and this act of conjoining them has a history of its own. The words, as given below, have been collected from old as well as from modern English :—

Some of these are compound words joined together according to the rules of Sanskrit Grammar:—

Old English "sovran" = Sanskrit, "suvarna".

(1) Old English "sovran," meaning gold, appears to have been derived from Sanskrit su-varna (gold), a compound word the etymological meaning of which is "a thing having a good colour." The word "Sovran" is now supposed to have been derived from the Latin "sovereign," but the sense in which the word was used in old English does not warrant its connection with "sovereign."

shock = shoka

(2) The word "shock" meaning a sudden and painful sensation appears to have been derived from the Sanskrit "shoka" (pronounced "shok"), meaning grief.

science = sanjna.

(3) The word "science," akin to Italian "scienza," appears to have been a modification of the Sanskrit "sanjna," which is

composed of the two words, viz., "sam" and "jna", meaning knowledge.

(4) The English "hour," akin to Greek "horus", appears to have been derived from the Sanskrit, "hora" which is a contraction of "ahoratra," meaning day and night. hour=hora × ×

(5) The English "warm" appears to have been derived from the colloquial Indian "garm" which has been derived from the Sanskrit "gharma" (heat). warm =garm =gharma.

(6) The English "song" appears to be a contraction of the Sanskrit, "songit," (meaning a song), which is a compound word and is composed of two words, viz., sam (which is used to produce an intensifying effect) and "git," meaning "song." Song=song-git. ×

(7) The word "can" has been derived from the old English "kan" meaning to know. Now, "kan" appears to have been a modification of the Sanskrit "gan", meaning knowledge. ✓ Can=kan =gan (jnana).

(8) The same remark applies to "canon", meaning "rule." ✓ Canon =jnana.

(9) The word "cancer" appears to be a modification of the colloquial Indian "kánkrá" which is a corruption of the Sanskrit "karkata", meaning a crab. ✓ Cancer =kankra (karkata)

(10) "Beast" in Chaucer (line 113, B text, Prologue to Legend of Good Women) is beast=brish (vrisha)

used to mean a bull. The Sanskrit for a bull is "brish" (vrisha).

wood = woodyana

(11) "Wood" appears to have been derived from the Sanskrit "woodyana", meaning a garden.

widow = widhawa.

(12) "Widow" appears to have been derived from the Sanskrit "widhawa," which is composed of two words, viz., "wi" and "dhava," meaning "deprived of" and "husband," respectively.

score = kuri (kriti).

(13) The English "score", meaning "twenty", appears to be a modification of the colloquial Indian "kuri", which has been derived from the Sanskrit "kriti", meaning twenty.

priest = prut (purohita).

(14) "Priest" appears to be a modification of the colloquial Indian "prut" which has been derived from the Sanskrit "purohit", a compound word consisting of two parts, viz., pura (town) and hit (well-wisher). Both "prut" and "purohit" mean the same thing, viz. "priest".

acid = asud (ausadha)

(15) The word "acid" appears to have been derived from the colloquial Indian "asud" (meaning medicine) which has been derived from the Sanskrit "ausadha" (from osadhi, meaning herbs).

ash = pash (pansu)

(16) The word "ash" appears to have been derived from the colloquial Indian

"pash" which is a contracted form of the Sanskrit "pansu", (meaning ashes).

(17) The word "amice", meaning linen dress, appears to have been derived from the Sanskrit, "amsu", meaning the same. amice =amsu.

(18) Old English "jaunt", akin to the French "jauncer", appears to have been derived from the Sanskrit, "sansar" which is a compound word and means a "family," the "world", and "people". jaunt =jauncer =sansara.

(19) The word "ferne", meaning ancient, (vide, line 14, Prologue to Canterbury Tales) appears to have been a modification of the Sanskrit "purana", which is a compound word. ferne =purana.

(20) The word "fern", a kind of plant, appears to have been derived from the Sanskrit "parna", meaning a leaf. fern=parna.

(21) Anglo saxon "ceorfan" (modern "carve"), meaning to cut, appears to have been derived from the Sanskrit "kripán" (a sword). ceorfan =kripana.

(22) Old English "habergeon", meaning a short coat of mail, appears to have been a modification of the Sanskrit "abarana", meaning a cover. habergeon =abarana.

(23) The word "frango" (as in infringe), meaning cripple, appears to have been derived from the Sanskrit "pangu", meaning the same. frango =pangu

better =brihat-tara.

(24) "Better", akin to Persian "behter", appears to have been derived from "brihat-tar", a Sanskrit compound word, meaning "greater".

most =mosto= mahat-tama.

(25) "Most" appears to have been a modified form of the colloquial Indian "mosto" which has been derived from the Sanskrit "mahat-tama".

manage =manj

(26) "Manage" (as in Faery Queen), meaning "to sharpen", appears to have been a modified form of the Sanskrit "manj", meaning "to rub", "to sharpen".

man = manava

(27) "Man" is akin to Sanskrit "manava" which has been derived from the Sanskrit "Manu", the first human being.

weet = wid (vid)

(28) "Weet", meaning to know, appears to be a modified form of the Sanskrit "wid".

earn = arjan

(29) "Earn" appears to have been derived from the Sanskrit "arjan" (meaning "to earn")

environ =avaran.

(30) "Environ" appears to have been a modified form of the Sanskrit "avaran", meaning to cover, to surround.

harbour =abar

(31) "Harbour" appears to be a modified form of the Sanskrit "abar", meaning "covered", "protected".

nerve = nari

(32) "Nerve" appears to be a modified form of the Sanskrit "nari" (veins).

bat = bita

(33) "Bat" is a modified form of the Sanskrit "bita", meaning a rod, whereas

(34) "ball" is a modified form of the Sanskrit "bartul" meaning a "sphere", a round-shaped or a cylindrical body. There is a distinct reference in the Mahabharata to the boys of the royal family of Hastinapur playing at "bita" and "bartul". ball=bartul

(35) "Bottle" is evidently a modified form of the Sanskrit, "bartul", a cylindrical body. The word "bartul" has been derived from the root "brit", meaning "to revolve", to draw a curve as in "britta", a circle. bottle=bartul

(36) "Sit" appears to have been derived from the Sanskrit "sthit", having the same meaning. sit=sthit

(37) "Much", akin to Italian "motto" appears to have been derived from the Sanskrit "mahat". much =motto mahat

(38) "Cot" may have been derived from the Sanskrit, "kutira". Cot=kutira

(39) "Cot" (meaning couch) may have been derived from the colloquial Indian "khat", which has been derived from the Sanskrit "khatta". Cot=khat =khatta

(40) "Cate" (as in Paradise Regained), meaning "bought", appears to have been derived from the Sanskrit "creeta", meaning bought. The word "Creeta" has been derived from the root "cree", meaning "to buy". cate=creeta

(41) "Band" or "bind" is akin to Sanskrit "bandh", having the same meaning. band =bandh

certain =satyam

(42) "Certain" appears to have been derived from Sanskrit 'satyam'.

stand =sthan

(43) "Stand" is akin to Sanskrit "sthana" which has been derived from the root "stha", meaning "to stand".

offer=arpan

(44) "Offer" appears to have been derived from the Sanskrit "arpan", which has been derived from the root "ri".

thirst =trista

(45) "Thirst" appears to have been derived from the Sanskrit "trista".

ginger =sringaber

(46) "Ginger" may have been derived from the Sanskrit "sringaber".

hallow or haloe=alo

(47) Haloe or hallow may have been a corrupted form of the colloquial Indian "alo" which is a contracted form of the Sanskrit, "aloka", derived from the Sanskrit root "look", meaning to see.

heart=hrit

(48) "Heart" may have been derived from the Sanskrit "hrit" which has been derived from the root "hri", meaning "to derive". The heart is so called because it derives blood from the essence of the food digested in the stomach.

rude=rudh

(49) "Rude" may have been derived from the Sanskrit "rudh" which has been derived from the root "ruh".

lucky =lucky (lukshmi)

(50) "Lucky" may have been derived from the Indian colloquial "lucky" which is a corruption of the Sanskrit "lukshmi", meaning the goddess of fortune.

(51) "Ration", meaning food, may have been a modified form of the Sanskrit "ráshi", meaning food. ration =rashi

(52) "Pedo" is akin to Sanskrit "pada". pedo=pada

(53) "Reg" is akin to Sanskrit "raja" (king). reg=raja

(54) "Middle" may have been a modified form of the Sanskrit "madhya". middle =madhya

(55) "Ostrich" may have been a modified form of the Sanskrit "ustra" (a camel). ostrich =ustra

(56) Old English "boke" (modern English "book") appears to have been a modified form of the Sanskrit "byacti", which means an "expression" as well as a "book". The Indian colloquial "bahi" is only a corrupted form of "byacti". boke or book =byacti

(57) "Agin" (in Chaucer) means "turned towards". It appears to have been derived from the Sanskrit "agra". agin=agra

(58) "Bullock" appears to have been a modified form of the colloquial Indian "bullad", which is a contracted form of the Sanskrit "balivarda". bullock =bullad =balivarda

(59) Greek "piscis" (meaning faith) is akin to Sanskrit "biswas" which is a compound word composed of two words, *viz.*, "bi" and "swas". piscis =biswas

(60) "Mate" (as in check-mate) appears to have been a corrupted form of the Sans- mate=mrita

krit "mrita" (dead) which has been derived from the root "mri", meaning to die.

nose = nasa

(61) "Nose" appears to have been a corruption of the Sanskrit "nasa" which has been derived from the root "nas" meaning to inhale.

stanza = stanzo = chando

(62) "Stanza", akin to Greek "Stanzo", may have been derived from the Sanskrit "Chando" meaning metre.

secure = sikur = swikar

(63) Secure (old English "siker", as in Chaucer) meaning "to assure", appears to have been derived from the Sanskrit "swiker", (meaning "to acknowledge") which is a compound word consisting of two parts, *viz.*, swa (own) and "kara" (action), derived from the root 'kri'—to do.

look = look

(64) Sanskrit "look" is akin to English "look".

seethe = sidh

(65) "Seethe" (to boil) has been derived from the Sanskrit "sidh".

mix = mish

(66) "Mix" is akin to Sanskrit "mish".

kythe = katha

(67) Kythe (in Chaucer), meaning "to show plainly" appears to be a modified form of the Sanskrit "katha", meaning to speak.

clepe = clepe

(68) Old English "clepe", meaning "to call", is akin to Sanskrit "clepe" (as in kalpa) having the same meaning.

juice = juice

(69) English "juice" is the same as the Sanskrit "juice".

(70) English "soup" is the same as the Sanskrit "soup." soup = soup

(71) "Twine" appears to be a modified form of the Sanskrit "tantri" (meaning "thread").

(72) "Paradise" is apparently a corrupted form of the Sanskrit "para-desh," (meaning a superior land) which is composed of two words, viz., "para" (great, superior) and "desh" (land).

(73) "Door" appears to be a modified form of the Sanskrit, "dwar," having the same meaning. door = dwar

(74) "Yes" appears to be a modified form of the colloquial Indian "os" (Nepali, etc.) which is a corruption of the Sanskrit "astu," derived from the root "os" meaning "to be," yes = astu

(75) "Serpent" appears to be an abridged form of the Sanskrit "serpa" which has been derived from the root "srip" (meaning "to move"). serpent = serpa

(76) "Brow" appears to be a corruption of the Sanskrit "bhru" brow = bhru

(77) "Safe" appears to be a corruption of the Sanskrit "shubha" (meaning "safe", "benign"). safe = subha

(78) "Barbarian" is apparently a modified form of the Sanskrit "barbar," meaning "uncivilised." barbarian = barbar

sound =swana

(79) "Sound" appears to be a modified form of the Sanskrit "swana" (meaning sound).

peer = priya

(80) "Peer" appears to be the same as Hindusthani "peer" which has been derived from the Sanskrit "priya" (meaning "favourite"). "Priya" has been derived from the root "pri"

money =mani

(81) "Money" is akin to Sanskrit "mani", meaning a "precious stone."

wreache =rish

(82) Anglo Saxon "wreache," meaning "vengeance", is akin to the colloquial Indian "rish," which is a modified form of the Sanskrit "irsha."

monsieur =moshai

(83) French "monsieur" is akin to the colloquial Indian "moshai" which is a corruption of the Sanskrit "mahashaya", a word composed of two parts, viz., "maha" (great) and "ashaya" (state, condition).

feud = viwad

(84) "Feud" (quarrel) appears to be a modified form of the Sanskrit "viwad" (quarrel), which is compounded of bi (against) and "bada" (speaking).

lath = lathi =jasti

(85) "Lath", meaning a piece of wood, is the same as the colloquial Indian "lathi" which is a corruption of the Sanskrit "jasthi."

air = hawa =bayu

(86) "Air" appears to be a modified form of the colloquial Indian "hawa" which is a corruption of the Sanskrit "vayu,' derived from the root "ba" meaning to "blow."

(87) " Lout " (in Chaucer), modified into modern English " loot ", is the same as the colloquial Indian " loot," which has been derived from the Sanskrit " lunth." lout=lunth

(88) "Sam" (Faery Queen, Book I, Canto X, Stanza XVII), modern English "same", is akin to Sanskrit " sama." same=sama

(89) " Opal " is akin to Sanskrit " upal ", meaning a stone. opal=upal

(90) Old English " kowth ", meaning " renowned ", is akin to Sanskrit "kathita." kowth =kathita

(91) " Quoth ", meaning " said ", is akin to Sanskrit " kath," meaning "to say." quoth=kath

(92) " Pynche " (Chaucer), meaning " to plait ", is akin to Bengali " painj " which has been derived from the Sanskrit " panj." pynche =panj

(93) " Welter " (Anglo saxon " welton "), meaning to " roll ", is akin to the colloquial Indian "ulta," which has been derived from the Sanskrit "udbarta." welter=ulta =udbarta

(94) Old English " warn " (as in Prologue to Legend of Good Women), meaning " to refuse ", is akin to Sanskrit "waran," which has been derived from the root " bri." warn =waran

(95) Old English "Bente" (as in Chaucer) is akin to Sanskrit " bandh." bente =bandh

(96) Old English " minnow," meaning " a small fish ", is akin to Sanskrit "meena" (meaning " fish "). minnow =mina

8

parrot = parabat

(97) "Parrot" appears to be a contracted form of the Sanskrit "parabat."

murrain = maran

(98) Old English "murrain" (meaning an epidemic) appears to be akin to Sanskrit "marak" or " maran."

curb = kharba

(99) "Curb" appears to be a modified form of Sanskrit "kharba."

roar = roda

(100) "Roar" appears to be akin to Sanskrit "roda", meaning "to cry."

prevail = praval

(101) "Prevail" appears to be a modified form of Sanskrit "praval", meaning "strong."

ago = agre

(102) "Ago" appears to be a modified form of Sanskrit "agre", having the same meaning.

thatch = chad

(103) "Thatch" appears to be akin to Bengali "chaitch", which has been derived from the Sanskrit "chad."

sooth = satya

(104) "Sooth" (meaning "truth") appears to be a corrupted form of Sanskrit "satya" (truth).

mask = mukhas

(105) "Mask" appears to be a contraction of the Sanskrit "mukhasa" which is a compound word consisting of "mukha" (mouth) and "sha" (that which lies on).

parvys = pravesha

(106) "Parvys" (as in Prologue to Canterbury Tales), meaning a covered entrance of a church, appears to be derived from the Sanskrit "pravesh" (meaning "entrance"), a compound word composed of 'pra' and 'vesha'.

(107) "Lace" (from old French "las" meaning "chord") appears to be derived from the colloquial Indian "rash" which has been derived from the Sanskrit "rashmi." lace=rash =rashmi

(108) "Save" appears to be akin to Sanskrit "sev", meaning "to serve," "to nurse." save=sev

(109) "Conch" (from Latin "concha)" appears to have been derived from the Sanskrit "sankha." conch =sankha

(110) "Vote" appears to be akin to the colloquial Indian "vat" which is a contraction of the Sanskrit "vac" (voice). vote=vat =vac

(111) "Voice" appears to be derived from the Sanskrit "vac." voice=vac

(112) "Corner" (from old English "coign" or "coin") appears to be akin to Sanskrit "kona." corner =kona

(113) "Rage" appears to be a modified form of the Indian "raga" which, has been derived from the Sanskrit root "ranj", meaning "to colour." rage=raga

(114) "Crude" (original meaning "bad") is the same as Sanskrit "crud" (meaning cruel). crude =crud

(115) "Lay" derived from Greek "Laicos" appears to be a modified form of the Sanskrit 'loka', meaning people. lay=laicos =loca

(116) "Arrant" (Latin errans) appears to arrant =aranya

have been derived from the Sanskrit "aranya", meaning "wild".

unction =anga-sechan

(117) "Unction", meaning "act of annointing" appears to be a contracted form of the Sanskrit "anga-sechan" which is a compound word consisting of two words, *viz.*, "anga" meaning body and "sechan" meaning "to smear."

up=upar

(118) "Up" appears to be a contracted form of Sanskrit "upari".

rescue =raksha

(119) "Rescue" appears to be a corrupted form of "raksha" having the same meaning.

voyage =baryaya

(120) "Voyage" appears to have been derived from the colloquial Indian "baich" which is a corrupted form of the Sanskrit "baryaya" or "baryayan". The former, *viz.*, "baryaya" is a compound word composed of "bari" (water) and "aya" (to go). The latter, *viz.*, "baryayan" is also composed of two words, viz., bari (water) and ayan (to go).

deck=dhak

(121) Deck (a low German word meaning the roof of a ship) is a contraction of the colloquial Indian "dhaka" (a cover).

axe=ashi

(122) "Axe" appears to be a modified form of the Sanskrit "ashi" (meaning a sword).

behaviour =byavahar

(123) "Behaviour" appears to have been derived from the Sanskrit "byavahar", a word compunded of three words, *viz.*, bi, aba, and hara.

(124) "Civil" appears to be a modified form of "savya" which has been derived from the word "sava" (meeting). The etymological meaning of "savya" is one who is to sit at a meeting. civil=savya

(125) "Amuse" appears to have been a modified form of Sanskrit "amode", having the same meaning. amuse =amode

(126) "Cash" is akin to Sanskrit "kosha", meaning 'money'. cash=kosh

(127) "Leap" is akin to colloquial Indian "laph" which has been derived from the Sanskrit "lampha". leap=lamph

(128) "Coarse" appears to have been derived from the Sanskrit "karkasha", having the same meaning. coarse=karkasha

(129) "Shackle" appears to be a modified form of Sanskrit "shrinkhala", akin to colloquial Indian "sheckal". shackle =sheckal

(130) "Murder" appears to be a corrupted form of the Indian "mur-dhar", meaning assault. murder=mur-dhar

(131) "Concubine" is clearly a corrupted form of Sanskrit "Karanka-bahini," which is composed of two words, viz., "Karanka" (a dish containing betel leaves) and "bahini" (a bearer). concubine =karanka-bahini

It will be seen that some of the words noted above, the number of which can be multiplied indefinitely, may or may not be of

common origin; but a good many of them, which are mainly compound words, can be proved to have been borrowed from Sanskrit. It is not the European dialects only which are connected with Sanskrit in the way we have noticed, a linguistic debt of a closer kind by Persia to India can also be traced with a greater success and facility.

**The reason why Indian words came to be used in many countries outside India is that Indians used to travel all over the world in the pre-historic times.**

The next question which presents itself is, how was it possible for the Europeans to borrow words from distant India? The answer to this question will be apparent from what we have already tried to prove in the foregoing chapters, and especially in chapters I and II, *viz.*, the incontestable fact that Indians of old used to travel all over the world with commercial and cultural objects in view, leading to the spread of Indian culture and civilization, in pre-historic ages, much beyond the territorial limits of present day India. The gradual waning of the spirit of adventure in the minds of the people of India, due possibly to the horrible loss of male population caused by the Kurukshetra war which took place about 5000 years ago, appears to have been the reason why the Indians of later days cut off all of their connection with the rest of the world.

## APPENDIX TO CHAPTER III.

*Chemistry and Medicine in Europe and Egypt.*

What has already been said leaves very little doubt about India being the original home of chemistry and medicine, if not of other branches of human culture. There was a time when Minerva and the sisters nine enthroned themselves on the verdant plains of India, radiant with the magnificent rays of a glowing sun. The inexorable hands of Fate have, however, turned the tables upon this unhappy land which has been sinking gradually into the deep abyss of ignorance and intellectual torpor. Europe, on the other hand, has awoke from its age-long slumber, and has, for the last few centuries, made a rapid stride through the mysterious realm of the unknown, evolving a material science which has instilled a new life into its limbs erstwhile benumbed with the cold and cheerless touch of a frigid climate. Intoxicated with the joy and infatuation of a partial triumph over the ways of Nature, modern Europe has been fervently running through a region which might lead to an approach to Paradise or to Hades. We, in bewilderment, are at a loss to know whether to follow it or to avoid it altogether.

**India, the original home of chemistry and medicine has been sinking into the deep abyss of ignorance.**

**Europe, on the other hand, is making a rapid progress which is viewed with suspicion.**

Whatever that may be, the bewitching

civilization of modern Europe was not what it was a few centuries ago. It was nurtured, while still in its cradle, by a wholesome milk flowing from the vigorous breast of ancient India. To add to the evidences already adduced in proof of this, let us enter into a brief examination of the lives of Hermes Mercurious Trismegistus, the Egyptian sage, and of Paracelsus, the European alchemist of the sixteenth century, persons who have been regarded as the pioneers of western chemistry and medicine.

European civilization was nurtured in its infancy by intellectual food supplied by India.

Additional proofs :—

*Hermes Mercurious Trismegistus.**

He was the first of the western chemists.

He was an Egyptian and lived in the time of Pharaoh. He is universally regarded to be the first of the western chemists. In an article on the "Hermetic Books" of this ancient sage of Egypt, Mr. Edward Maitland writes :—"The sacred books of Hermes," says Mrs. Child in her admirable compendium, containing the laws, science, and theology of Egypt, "were declared by the priests to have been composed during the reign of the gods, preceding that of their first King, Menes. Allusions on very

* Mr. Anindranath Chatterji, Secretary, Institute of Hindu Chemistry, has kindly collected for me the informations given here on the lives of H. M. Trismegistus, Paracelsus, and Robert Boyle.

ancient monuments prove their great antiquity. There were four of these books, and the subdivisions of the whole make forty two volumes. These numbers correspond exactly to those of the Vedas, which the Puranas say, were carried into Egypt by the Yadavas at the first emigration to that country from Hindusthan."

He drew his knowledge probably from the Vedas which were carried by the Yadavas into Egypt.

As regards the mystic title of the celebrated Hermetic fragment, *viz.*, "Kore Kosmou", Dr. Wilder in his introduction to the work of Mr. Thomas Taylor, the Platonist, entitled "Dissertation on the Eleusinian mysteries" asserts that the name "Kore" is Sanskrit, and that the Hindu goddess "Parasupani", also called "Goree", is identical with the Kore-Persephonia of Hellenic worship."

*Paracelsus.*

One of the greatest and best known of the medical occultists was Theophrastus Bombast Von Hohenheim, generally known by the name of Paracelsus. He was born in switzerland on the 10th of September 1493. Much of his knowledge he gathered from the Gipsies (who are of Indian origin, and were a highly cultured people even in the 16th century). He was renowned as a healer wherever he went, and was often sent for by men of high rank whom he

He was one of the greatest of the medical occultists.

He gathered much of his knowledge from the Gipsies,

and was an adept in the wisdom of chaldea, Egypt and India.

cured after they had been given up by the doctors. He was an adept in all the wisdom of Chaldea, Egypt, and India. (See Life of Paracelsus by Swainson).

He travelled to India.

Later on, Paracelsus travelled a great deal. He visited Germany, Italy, France, the Netherlands, Denmark, Sweden, and Russia, and it is said that he even went to India.

Every reader of the works of Paracelsus who is also acquainted with the recent revelations made by the eastern adepts, cannot fail to notice the similarity of the two systems, which, in many respects, are almost identical, and it is therefore quite probable that Paracelsus was instructed in the secret doctrines of the teachers of occultism in the East. The information given by Paracelsus in regard to the seven-fold principles of man, the qualities of the astral body, the earth-bound elementaries, etc. was then entirely unknown in the West. (See Life of Paracelsus by Dr. Hartmann.)

*Robert Boyle.*

Some of his formulas correspond to some found in Rasa-sara of Govinda.

The age of modern chemistry commenced with Robert Boyle (1626-1691). In his works we find certain formulæ which appear to correspond to some given in Rasa-sara by Govinda (8th century A.D.). In order to avoid prolixity, a fuller discussion of the subject is deferred to a later date.

## RASA-JALA-NIDHI

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By

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(Ayurvedic Physician)

Of 41-A, Grey Street, Calcutta.

## OPINIONS.

(1)

Albert G. Ingalls, Associate Editor, "Scientific American" :—

I have to thank you for a most interesting evening devoted to the study, admittedly somewhat superficial, of volumes I and II of your work on Indian Chemistry and Alchemy. Western science has taken a somewhat different direction from this, and to me, therefore, your detailed account of the alchemical and healing arts was most fascinating.

*These books have been given a special place in the library of the journal, reserved for works which are eminently worthy of preservation,* for the edification of future editors.

(2)

Prof. M. Winternitz of the Prague University (Czecho Slovakia) :—

I am much obliged to you for kindly sending me volumes I and II of your work, Rasa-jala-nidhi. It is an interesting contribution to our knowledge of Hindu Chemistry, alchemy, and medicine.

(3)

Prof. Berthold Laufer of the Field Museum of Natural History, Chicago :—

It is very kind of you to send me volumes I and II of your work on Indian Chemistry, a subject in which I have always been interested. I wish to thank you cordially for giving me this opportunity. I think it will be very useful to have a complete compendium of this important subject, such as you propose...... I shall look forward with great interest to the continuation of your work.

(4)

The Chemical News of London, dated the 16th September 1927 :—

Alchemical Literature.

Two Important Indian Publications. It is becoming apparent that there is a revival of scientific interest in Alchemy. Two new and important contributions have appeared in India, and merit attention. The first is a bound volume by Dr. Bhudeb Mookerji M. A., entitled Rasa-jala-nidhi or Ocean of Indian Chemistry and Alchemy, and is the first of a series to be edited by him.

Hindu Chemistry and alchemy is a subject almost unknown and our indebtedness to the Indians' early contributions to the development of science was briefly dismissed in the Brief Outline of the History of science (by Dr. Gerald Druce). *We are therefore especially grateful to Dr. Bhudeb Mookerji for his compilation*... Details are given for the preparation of mercury for use in medicine and *for transmuting itself or base metals into gold*, etc. The bilingual text is accompanied by a glossary and definitions and is preceded by a valuable introduction...Of both works under review it may be said that further publications will be awaited with interest.

(5)

Chemical News of London, dated 13-1-28 :—

Dr. Bhudeb Mookerji has undertaken the heavy task of compiling in about 10 volumes, a systematic and comprehensive treatise on the almost lost and little known science of Hindu Chemistry.

His first volume was well received, and the second part has quickly followed it. Succeeding volumes will be awaited with impatience.... Dr. Bhudeb Mookerji's second volume maintains the high standard of his first, and is a valuable contribution to alchemical literature.

(6)

Journal of the Society of Chemical Industry (London), May 18, 1928 :—

Any chemist who is (*a*) dissatisfied with his family doctor, or (*b*) tired of ions, pH, enzimes and co-valencies, may be recommended to read this book, where he will at least find much that is novel. We fancy that most of his recipes will be new to the Society of Chemical Industry.......This and much other remarkable and unexpected knowledge came to Mr. Mookerji partly from ancient books and partly from a learned yogi with whom he studied. Alchemy finds its place among the iatro chemical remedies......... We look forward with ill-controlled excitement to the publication of Mr. Mookerji's chemical investigations, but, in the meantime, there can be no doubt of the efficacy of his remedies..........

Chemists will certainly get their money's worth if they buy this book.

E. J. Holmyard.

(7)

Sir Jagadish Chandra Bose :—

Please accept my sincere thanks for a copy of Rasa-jala-nidhi which I am looking forward to reading with great interest. Of course, in chemical Science, you should interest modern chemists in the achievement of Hindu Chemistry in the past.

(8)

Sir C. H. Setalvad, Vice-chancellor, Bombay University :—

It is indeed very creditable to you to have carried on your researches in Indian Chemistry and to publish the results in such comprehensive form. The publication is sure to attract the attention of all those who are interested in making available to the public the past achievement in the field of science by India. I will

certainly ask the syndicate of the university to give such encouragement to your work as they may think proper.

(9)

Dr. H. K. Sen, M. A. D. SC. Professor and Head of the Department of Applied Chemistry, University College of Science and Technology, Calcutta :—

I thank you very much for the very attractive copy of your Rasa-jala-nidhi, Vol. I. I enjoyed the reading of the whole volume...... you have been able to make the treatise extremely interesting. The work indicates erudition and the requisite patience of a scholar........ I am really looking forward to your subsequent volumes, which I hope will come out in rapid succession and justify the excellent promise given in the first volume......

(10)

Prof. Arthur B. Lamb, Director, Chemical Laboratory of Harvard College, Cambridge, U. S. A :—

I have examined the book with interest and thank you for it.

(11)

Prof. L. M. Dennis, Head of the Department of Chemistry, Cornell University, U. S. A :—

I looked through the book with much interest.

(12)

Prof. H. Nagaoka of the Institute of Physical and Chemical Research, Tokyo :

You were so kind as to send me your interesting book "Ocean of Indian Chemistry and Alchemy," which I read with much interest......I am at present engaged with electric experiments in the same domain of research......I hope to obtain sufficiently large quantity of gold from mercury.

I have placed your book in the library of the Institute so that it will be consulted by those interested with the subject. There is an old Chinese treatise on similar subject. I believe that it originated from India.

(13)

"Englishman," Calcutta, May 30, 1927.

The work is an ambitious undertaking and is expected to be completed in 10 volumes. The book claims to be a comprehensive treatise on Indian Chemistry and alchemy, an art almost lost several centuries. It contains much interesting matter which deserves testing under modern laboratory methods. The author describes several processes, by which he maintains, it is possible to make mercury swallow, without any appreciable increase in its weight, much of gold and other materials. Another equally interesting topic he has dealt with is the transformation of base metals into gold. In view of the scientific attention that has been devoted to this subject, there is no reason why the formulae, as given out in this work, should not be given a fair trial. These instances, taken at random, are fair samples of the startling and important nature of the contents. The processes have been described in detail and the author himself has given his agreement with them from the result of his own research. The first instalment from the pen of this author is promising. He deserves the thanks of all orientalists and Indian chemists for rescuing a science that was in great danger of being lost altogether. The work is heartily recommended to the attention of those interested in Indian Chemistry.

(14)

"Bharatvarsha" the leading Bengali magazine of Calcutta :—

The work, when completed, will no doubt prove to be the greatest and the most comprehensive treatise on Hindu Chemistry and alchemy......The author is an eminent and successful physician, and most probably he has been able to earn a high reputation by prescribing the medicines described in the book under review. Physicians in general, we are sure, will be profited by a study of the book.

(15)

Journal of Ayurveda, Calcutta, March 1928 :—

These volumes are quite welcome, compiled as they are from various works on Rasa-vidya from the age of Ramachandra up to the present time.

Preparation of mineral acids (and other chemical medicines) was known in India, according to the author, as early as the age of Ravana, and not introduced by the Portuguese as suggested by Dr P. C. Roy.

The treatment has been thorough and practical and is quite legible to all.

The volumes are worth reading as the author introduces many new informations in them. He had to study many ancient and new works in a scholarly way before writing the volumes under review. As he did not begin as an amateur, his work is bound to be reliable and useful.

The method of arrangement is very good—the original Sanskrit text has been given first, followed by English reading. Besides compiling, the author had to write for himself portions of sanskrit texts whenever he found something wanting or lost, and this reflects a great credit on the author's profound scholarship.

The printing, paper, binding, and get up are all that could be desired. We recommend these volumes to all lovers of Ayurveda, as the treatise may be said to have introduced a new era in the revival of Ayurveda. We anxiously await the publication of the remaining volumes.

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**To be had of—**

The Author, 20 44/A, Grey Street, Calcutta and of all the principal book-sellers of Calcutta ; of Messrs, D. B. Taraporevala Sons & Co., 190, Hornby Road, Bombay ; and of Messrs. Luzac & Co., 46, Great Russell Street, London, W. C.



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